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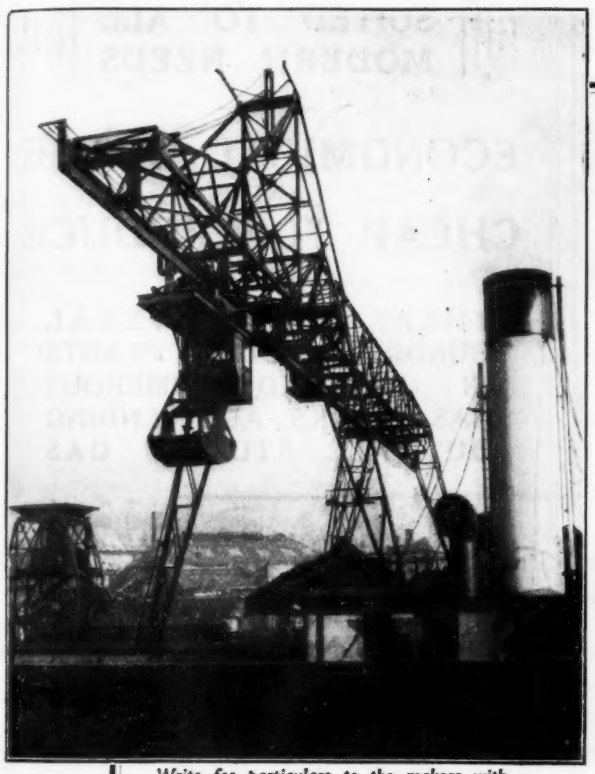

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Gas Journal

DECEMBER 11, 1935

Vol. 212. 87th Year No. 3786

Editorial Notes

Fuel Research at Greenwich

THE 1935 Report of the Fuel Research Board—brief reference to the publication of which was made in these columns last week—is made the occasion for a review of the progress achieved in the fuel industries during the twenty-five years of the King's reign. In regard to the efficient utilization of coal, the great advances made by the Gas Industry come in for comment. It is mentioned that during the period under review the gas supplied by all authorized gas undertakings in Great Britain increased from 178,000 million cu.ft. to 295,300 cu.ft., while in the same period the coal used only increased from 15·1 to 17·1 million tons. Had the efficiency of the process of gas manufacture remained stationary, it is stated, an additional 7·9 million tons of coal would have been needed by the Industry in 1934. While this happens to be broadly true, the "efficiency" of the Gas Industry cannot strictly bear a direct relation to the quantity of coal it treats. The aim of the Industry is to supply cheap gas—coupled, of course, with good service. Recovery of benzole, for example, implies greater coal consumption, but if by such recovery the cost of the gaseous therm can be reduced, then the increased coal consumption spells not lower, but greater, efficiency. On the other hand, should economic conditions make it appropriate to produce a large quantity of water gas, then decreased coal consumption would mean higher efficiency. Our point is that the processes of the Gas Industry are so flexible that coal consumption figures do not provide a true index to efficiency. Again, coke ovens now supply 18,000 million cu.ft. per annum to the Gas Industry. Therefore, to say that 17 million tons of coal was used by the Industry takes no account of the quantity used by the coke ovens in producing gas sold to the public by gas undertakings.

The foregoing is not a criticism of the Report; nor is it a mere quibble. Its purpose is to emphasize what we have contended on more than one occasion—that the Gas Industry is a coal treatment industry catering for a demand, a growing demand, for smokeless fuels and other products resulting from this treatment. Increased make of gas per ton of coal carbonized may or may not represent good practice or wise policy; it all depends on particular circumstances. The mere statement by a chairman of a company or a gas committee—worse still by a gas engineer—that in 1934 the make of gas per ton of coal increased from, say, 16,000 cu.ft. to 17,000 cu.ft. leaves us quite cold. It may be a cause for congratulation; equally it may be a cause for sympathy. The Gas Industry would be all the better for fewer bald statements of this nature. However, the basic fact is that the Gas Industry treats a large quantity of coal very efficiently and is likely to deal in a rational manner with a greater annual quantity. Also, its work is becoming more and more closely associated with that of the coke oven industry in the manufacture and sale of all products. That this closer association is recognized by the Fuel Research Board is shown by the investigations into the types of coal-blends suitable for coke and gas manufacture in progress at the Research Station.

Steaming in Horizontals

AN investigation of immediate importance to the Gas Industry, and to which we called attention when commenting on Mr. Braidwood's Paper last week, is concerned with steaming the free space in horizontal retorts. "It is satisfactory," states the Report in this connection, "to find that this method is now being adopted by some of the largest gas-works in the country, with the result that 5 to 10 more therms of gas are obtained for each ton of coal carbonized." This statement strikes us as being unhappily phrased, for two reasons. First, the implication that the very production of these extra therms is in itself praiseworthy; secondly, the implication that the process is especially suitable for large works. It is clear, however, from the account given in our columns last week by Mr. Braidwood of the results of steaming in horizontals at the Beckton Works of the Gas Light and Coke Company, and the informative discussion to which his Paper gave rise, that at some works—large or small—there fortuitously may be a particular combination of circumstances which will contribute to a high measure of success, while at others economic considerations may be against the adoption of the process. It is, in brief, by no means praiseworthy to increase the make of therms per ton of coal carbonized and at the same time to increase the cost per therm.

This phase of the work of the Fuel Research Board is, of course, of the utmost value to the Gas Industry. A technique of steaming the free space has been developed at the Station, and where circumstances are favourable this technique can be applied by gas undertakings.

Results of work since the compilation of the Report were given by Captain Fraser Shaw in last week's "JOURNAL." It was during the discussion on Mr. Braidwood's Paper that Mr. Parrish, of the South Metropolitan Gas Company, expressed the hope that in future the Fuel Research Board would allow their technical results to be accompanied by a financial statement. In a case such as steaming in horizontals it is difficult to see how this would assist. Captain Fraser Shaw has come to the conclusion that the extra therms made by steaming horizontals at the Fuel Research Station are, in his own words, "as near an approach to getting something for nothing as is possible in the commercial world." On the other hand, to date the results of the Beckton investigation show these extra therms to be very dear at the price.

The Fuel Research Board have demonstrated what can be achieved technically in a certain set of circumstances, and it is the concern of the individual gas undertaking in the light of the particular conditions under which it operates, to determine whether or not the technical results can be translated into financial gain. If economic conditions are favourable, then the technique developed by the Board can be applied with a sense of security. We suggest that too close an eye on the financial aspect would detract from rather than enhance the value of the work undertaken at Greenwich. This work is essentially a link between university laboratory research and research carried out by private undertakings. Many lines of commercial research have to be abandoned because they hold no promise of a speedy monetary return. At the Fuel Research Station, on the other hand, investigations into the by-ways can be pursued irrespective of immediate commercial success; and for our part we maintain that this type of investigation is of great importance in solving fuel problems.

Cleaner Coal

IT is mentioned in the Report that the quantity of coal cleaned in 1934 was 40% of the total raised; and in relation to the output of coal which is generally suitable for cleaning—*i.e.*, fine or small coal—the proportion actually so treated is in general considerably higher than is indicated by the percentage of the total output of coal. "There is an ever-increasing movement," observes Dr. F. S. Sinnatt, Director of Fuel Research, "to regard coal as raised from the mine as a raw material which must be processed before it is offered for sale. . . . Treatment in washing and cleaning plants, screening into suitable sizes, together with the selection of parts of seams or the mixing of two or more seams, are the normal practice of the coal industry. This technique is, however, being rapidly refined, and accurate grading and precise mixing and blending to produce coals of uniform qualities are assuming increased importance. In some cases it would be an advantage if the inorganic matter present in the coal could be reduced to the lowest possible percentage. . . . Coal containing less than 2% of ash may be considered as ultra clean, but lower percentages are possible, and greater demands for coal of this type may be made in the future." In this connection the results of the National Coal Survey are showing that in practically all the British coalfields there are seams containing less than 2% of ash. Future improvements leading to increased economy in the use of fuel will depend more and more on the selection of the most suitable coal for the particular purpose required, and pretreatment of the coal before its final combustion will become of increasing importance. Pretreatment commences at the collieries, and conversion into gas, coke, and tar follows. The tar may be converted into motor spirit or oils. Developments along these lines are all reflected in the investigations forming the research programme of the Fuel Research Board.

Work on Blending

THE intermittent vertical ovens at the Station are in use for investigating the effects of blending strongly and weakly coking coals, with and without the addition of coke breeze. To date one strongly-coking Durham coal and one non-coking Leicestershire coal have been dealt with. A series of tests has been carried out at "intermediate temperatures"—carbonizing temperatures of 850° C. in the bottom heating flues decreasing to 650° C. in the top flues, giving a period of carbonization of 20 hours per charge. Altogether, 73 blends have been carbonized. In regard to coal blends, introduction of non-caking coal increases the combustibility of the coke as determined by ease of ignition and the time required to reach an intense fire. The maximum rate of radiation is not greatly affected. When the caking power of the coal is controlled by adding low-temperature coke breeze instead of non-caking coal the effect is proportionately more marked. In this case the maximum rate of radiation is definitely increased. Again, when the non-caking constituent of a blend is progressively replaced by breeze the same increase of combustibility is observed. The effect of the breeze becomes less marked as the caking power of the coal blend decreases—*e.g.*, when the proportion of coking coal is only 60% its effect is noticeable only in regard to ease of ignition. Experiments are now being undertaken at the temperatures normally used in settings of this type for gas manufacture.

In connection with the production of motor spirit and lubricating oil from home sources, researches have been continued into the principles underlying the hydrogenation of coal and the hydrogenation-cracking of tars and tar oils; the development of these processes is being studied in technical-scale plant in order to obtain sufficient of the motor spirit and oils to test them under practical conditions. The motor spirit is being examined under service conditions. The most important item in this field has been the design and erection of a plant capable of treating about 300 gallons of tar per day, together with the distillation and refining plant required to deal with the spirit produced. The results of the preliminary experiments, it is stated, have fully justified the erection of the plant. It has been found that the technique of hydrogenation does not necessarily require high pressures, and thanks to increasing knowledge of catalysts a process has been worked out on a semi-commercial scale at the Fuel Research Station for the reduction of tar acids by treatment with hydrogen at atmospheric pressures. Also, researches are in progress with the object of synthesizing lubricating oils from coal derivatives. These investigations, however, have not yet passed beyond the laboratory stage, and so far as is known no synthetic product from these sources has possessed the combination of properties required for a lubricating oil of satisfactory quality.

The Industry's Watchdogs

EXACTLY how much the Gas Industry owes to its watchdogs there may be difficulty in determining, because, while we are aware of the misfortunes that overtake us, those which pass us by must often go unheeded, and sometimes unknown. We all, however, recognize that the debt is a big one, and that it is up to us to reciprocate, by fostering and well tending the watchdogs, whose unquenchable zeal and protective activities are exercised

unceasingly on behalf of the Industry. There are several of them, each having its well-known name, and each bearing its own individual share of responsibility. Each, so to speak, guarding its allotted portion of the Gas Domain. But it is to the one appropriately named the Gas Companies' Protection Association that we would at this moment specially refer, because of the extended report of the proceedings at last month's annual general meeting that has found the fullest publicity in the pages of the "JOURNAL."

The report, it will be agreed, is a recital which makes full recognition of the valuable services of this particular organization. It is only the occasion of the annual general meeting that affords an opportunity of letting the "neighbourhood" know how efficient is the work of the Gas Companies' Protection Association. Who beyond those directly taking part can have imagined, until they read the report of the meeting in the "JOURNAL," how manifold have been the activities of the Association during the past twelve months? Surely a watchdog that appeals most eloquently for reciprocity from those whom it serves! Going back over the years—to the occasions presided over by Dr. Charles Carpenter, and by the late Mr. Harry E. Jones before him—we do not recall a meeting of the Association that was "flat," but 1935 is outstanding for the number, variety, and importance of subjects discussed. The Association is growing older—we are all doing that—but its thirty-eighth annual meeting found it in full possession of all the most desirable attributes of youth, allied with that ripe experience which makes its services of ever-increasing usefulness to the members.

Mr. R. W. Edwards has had a very busy time directing the affairs of his own constantly expanding Undertaking, the Mid-Southern Utility Company, and he has also taken a full share in the public life of Aldershot, having occupied the Mayoral Chair for a prolonged period, but notwithstanding all this he has found opportunity constantly to serve his colleagues in the Industry through his connection, extending over more than twenty years, with the Gas Companies' Protection Association. For some years, in his position as Chairman of the Association, he has presided over the meetings, and in this capacity his Addresses have been both helpful and informative. As on previous occasions, he dealt this year with a number of the more important subjects affecting the Gas Industry as a whole and the Association in particular, and Mr. E. J. K. Fussell put the matter well when, in proposing a vote of thanks to Mr. Edwards for presiding, he expressed the hope that every member of the Association would read the Address, because it would help in driving home to them the usefulness of the Association. But much of the work consists of advising inquiring members upon doubtful or complex points, and this, though a conspicuously valuable part of the service offered by the Association, must remain largely unrevealed. In times past the Association was markedly fortunate in the fact that its late Secretary, Mr. F. E. Cooper, had a great fund of experience of parliamentary and legal matters upon which to draw; and his son, Mr. R. Girdlestone Cooper, who has now succeeded him as Secretary, has started with the enormous advantage of having been trained in his father's office.

Apart from its bearing upon the affairs of the Association, Mr. Edwards's review was of a heartening character. He is convinced that at no time in its history has the Industry stood higher in respect of "Service;" and his summing-up of the outlook in general may be repeated here: "The gradual improvement in the affairs of our country has naturally been reflected in no small measure on our own particular Industry. Our commodity continues to find favour on all sides, and sales move steadily upward, due in no small measure to the huge quantities of new apparatus that are regularly connected. The ingenuity of our engineers and manufacturers is ably shown in the many ingenious ideas which they carry into modern appliances, making them more useful and attractive, and generally increasing their utility. . . . Never during our 38 years of existence have we been so pre-occupied in safeguarding our interests and paving the way for expansion in the future of that Industry to which we have devoted our faculties."

Keep in the News

REFERRING in these columns some time back to the unequalled service, so far as the Gas Industry is concerned, which the "JOURNAL," by reason of the amplitude of its reports of the proceedings at a large number of company meetings, renders to investors, we voiced the confident opinion that these reports—in many cases they are practically verbatim—must be recognized as being by no means the least valuable feature of our pages. Through them investors are able to follow at long intervals the fortunes, not only of the undertakings in which already they may be financially interested, but of others in which they may contemplate the acquisition of shares.

As showing the value of this feature of ours, we remarked then that "under changed economic conditions, the number of people with money—even if only small sums—to invest seems to be growing continuously, and any publication which, like the 'JOURNAL,' may be the means of turning their minds into safe channels, is rendering a public service. There are so many rough and rock-strewn straits in which, unpiloted, the frail craft of the small capitalist may easily come to grief." Since those words were penned, the practical possibilities of investing money have, in the case of hundreds of thousands of people, been eliminated, or at any rate seriously curtailed, but now, happily, things are improving again. The purchasing power of the public is expanding, and large numbers of small investors will once more be looking out for a suitable resting place for their hard-earned money. What resting place can be more suitable than the Gas Industry? None—provided that it combines with its sense of security a "certain liveliness."

The days of the half-yearly meeting have gone, and, except to the extent that an opportunity for publicity has gone with them, possibly their passing has been unregretted—particularly as so many of them had, through force of circumstances, to be held right in the midst of the holiday season, thus condemning Directors and officials, who were obliged to be present, to some interference with well earned leisure. But this loss of publicity has left a blank which should be filled. Never before has newspaper reading been so universal: never before have people been able to hear so much. All of which is to say that never before have the public been so well informed—so rapidly and so closely in touch with events as they occur. This must mean that they require a more intimate relationship with their investments, as with other things, than formerly sufficed. Twelve months is a long interval, and if, in many cases, it may be found inadvisable to fall in with the suggestion previously made here to get over the difficulty—that a brief statement made by the Board, sent out with the interim dividends, would be welcomed by many proprietors—then such other opportunities as may offer themselves to keep gas financial progress in the news should be seized upon. in order that the gap may be bridged over. The excellent Industry propaganda work that is undertaken now must be invaluable, but the investor regards matters from his own particular angle. What he needs to be

assured upon are the attractions of the Gas Industry from the financial standpoint, in competition with other suitors for his monetary favours. This means something beyond being satisfied that the Industry itself is essential to the welfare of the community. The railway systems illustrate in a way what is intended by this.

Admittedly, the steady nature of the Gas Industry limits " news " opportunities of the character indicated here, but that is merely an argument for the resolute exploitation of such as do occur. A writer in the *Financial Times*, though not referring specifically, if at all, to gas, draws attention to " the practice generally followed in the United States of issuing quarterly reports, as a result of which shareholders are in the happy state of never being kept more than three months in suspense regarding the fortunes of the businesses in which they are interested." If progress reports were published at three-monthly intervals, he thinks that public confidence in stocks and shares would be greatly increased.

What we have in mind is not the cultivation of greater confidence, so much as the creation of greater appeal, but from either point of view there is evidently sound reason for the advice to the Gas Industry to " keep in the news," financially speaking.

Correspondence

In Defence of the C.U.C.

SIR,—My attention has naturally been drawn to your editorial on the First National Coal Convention and to that headed " Foes or Friends? " in your issue of Nov. 27.

In the former it is stated that . . . " it is difficult to regard the activities of the C.U.C. as anything but inimical to the Gas Industry in its business of providing economical smokeless fuels and efficient heat service. . . ."

In the latter, scorn is thrown on the suggestion that the C.U.C. is an " ally " of the Gas Industry.

These comments seem to have been inspired by some resentment at the remarks made by one or two of those who read Papers, or took part in the discussions, at the Convention. Your editorial appears, however, to have lost sight of the fact that the C.U.C. is supported by, and representative of, the colliery owners as well as the coal factors and coal merchants, and that many collieries derive an important part of their revenue from sales of coal to gas undertakings.

Further, you would appear to have confined your comments to those Papers read at the Convention with which you disagreed; or perhaps you did not read them all.

I shall be obliged, therefore, if you will allow me to quote some other statements made by contributors to the proceedings, and I think that after perusing them your readers will agree that gas was not unfairly treated.

In conclusion I may say that the subjects and authors of the Papers were deliberately chosen with a view to catholicity of opinion and that, unlike some other industries, the C.U.C. welcomes the expression of divergent views from its platform.

Yours, &c.,
for the Coal Utilisation Council,
W. R. GORDON,
Director.

British Industries House,
London, W. 1,
Dec. 7, 1935.

REFERENCES TO THE GAS INDUSTRY AT THE NATIONAL COAL CONVENTION.

By Mr. John Charrington, Jnr. (a coal merchant).

" If the public are to go on burning coal in their homes, this problem (that of storage) has got to be overcome, and we cannot blame the modern householder if he turns to carefree gas or electricity if the coal trade does not execute his orders as and when he wants them executed.

" In my opinion, the retail merchant will be well advised to study and to understand the merits of the various smokeless fuels on the market; to make their advantages known to his customers, and, in short, to ' sell ' smokeless fuels rather than to be content to book orders for them."

By Mr. K. Hargreaves (a coal merchant).

" The open coal fire has advantages which should not be overlooked or minimized. Gas and electric fires also have their advantages, and in the writer's view all three have their place in the modern home. There is nothing ultimately to be gained by those interested in any one form of heating attempting to decry the others."

By Dr. Margaret Fishenden.

" There are many people who question whether in an age that calls itself scientific the practice of discharging coal smoke into the air should be tolerated. There are many alternative methods of smokeless heating: by gas, gas coke, low-temperature coke, anthracite, or electricity.

" At average prices, say, house coal 45s. a ton, gas 9d. a therm, electricity 1d. a unit, heat costs 5 times as much in gas and 15 times as much in electricity as it does in raw coal. These figures, as we shall see, are not fair to gas and electricity, either of which can be used much less wastefully than coal, and can be turned on or off as required.

" For intermittent use the relative position of gas and electricity is further improved, so that if a room is occupied for less than half the time, gas becomes actually cheaper than coal.

" Again, for hot water production on a fairly large scale nothing is anything like so cheap as the independent coke-fired boiler which not only burns a cheap fuel but is a fairly efficient appliance, and utilizes about one half the heat of the coke. . . . But here again, if the demand is intermittent and the hot water produced is left for hours cooling in the cylinder, the position may be greatly modified and gas may become cheaper than solid fuel.

" The fact that most of the gas has been removed at the gas-works tends to make coke rather difficult to light. The Gas Industry is alive to these points and is meeting the situation by grates specially designed to burn coke and provided with gas lighters, and by improving the quality of coke intended for the domestic market.

" The bath water can then be heated by a small independent boiler burning coke or anthracite and a gas stove used for cooking. Gas fires would be installed in dining rooms and bedrooms and a coal fire in the sitting rooms.

" In cases where a small fire will warm the kitchen sufficiently, the smallest size of independent boiler, with a small gas cooker, may sometimes be found preferable even for working-class families, where an ample supply of hot water is more important than a very warm kitchen."

[We are glad that Mr. Gordon agrees with us that many collieries derive an important part of their revenue from sales of coal to gas undertakings. The fact that the Gas Industry is one of the coal industry's best customers was emphasized in our editorial comments to which Mr. Gordon takes exception. Mr. Gordon has apparently overlooked this fact. We would point out, too, that our comments were concerned with the opening session of the National Coal Convention, at which a most vigorous attack was made on the gas fire—an attack which, we mentioned, was greeted most enthusiastically by the meeting. We maintain that the tone of the meeting justified the attitude expressed in our columns on Nov. 27, and we still find it difficult to regard such activities as anything but inimical to the Gas Industry.—ED. " G.J."]

Personal

Mr. J. T. HAYNES, Engineer and General Manager of the Rotherham Gas Department, is joining the Board of Parkinson & Cowan (Gas Meters), Ltd., and will shortly take up his duties as General Manager at Victory Works, Manchester.

* * *

We are informed that Mr. F. W. ROGERS, formerly employed as gas accountant by Anderson Brothers, has been appointed Travelling Gas Accountant to the Gas Consolidation and Severn Valley Gas Corporation.

* * *

Miss MARGUERITE PEARS, of the Central Information Bureau at Grosvenor Gardens, has been appointed Hon. Secretary of the London and Home Counties Branch of the Association of Special Libraries and Information Bureaux.

* * *

We learn that Mr. CECIL H. CHESTER, the Engineer, General Manager, and Secretary of the Swindon and District Gas Corporation, has been appointed a Director of the Swindon United Gas Company.

* * *

We are informed that Mr. L. J. FOWLER, B.A., A.M.I.C.E., has resigned his position of Technical Adviser to the London and Counties Coke Association to join the Staff of Ideal Boilers and Radiators, Ltd., in Hull.

News in Brief

The Gas Institute of New Zealand is holding its next meeting in the City of Christchurch in February, 1936.

The 1936 Annual Meeting of the Canadian Gas Association is dated for July 8, 9, and 10 in the City of Vancouver, B.C.

Applications are Invited for the position of Assistant Distribution Engineer by the Stockport Gas Department at a commencing salary of £320.

An Increase of 17% in the make of gas compared with the corresponding period last year has been recorded by the Swindon United Gas Company.

New Carbonizing Plant for their Gas-Works was recommended at a meeting of the Finance Committee of Arbroath Town Council on Dec. 5.

An Interim Dividend of 2%, less income-tax, will be paid on the ordinary shares of the South-Western Gas and Water Corporation, Ltd., on Dec. 16.

In an Address to the Liverpool Boleader Club, Mr. J. Sandon Stubbs, Secretary of the Liverpool Gas Company, spoke of the activities of the Gas Industry.

The Position of Engineer and Manager is vacant at Penrith, and the Corporation invite applications for this appointment at a commencing salary of £300 per annum.

New Street Lamps, fitted with "Holophane" refractors, have, we learn, been erected experimentally by the South Suburban Gas Company in Orpington High Street.

The New Issue of £300,000 Consolidated Ordinary Stock (announced in our columns on Nov. 27) by the Alliance and Dublin Consumers' Gas Company has been largely oversubscribed.

An Engineer and General Manager is wanted by the Rotherham Gas Department. The salary will be at the rate of £700 per annum rising by four annual increments of £25 to £800 per annum.

Over 135·5 Miles of Thoroughfares in the City and Royal Burgh of Dundee are publicly lighted, 120 miles by gas and 15·5 by electricity. There are 7,778 gas lamps and 621 electric. The annual consumption of gas for this purpose is 105,462,700 cu.ft.

A Correction.—In our report of the remarks made by Mr. W. Miller, of Walton-on-Thames, during the discussion on the Paper by Mr. G. L. Braidwood on "Steaming in Horizontal Retorts" ("JOURNAL" for Dec. 4, p. 707), the following sentence occurs: "During that period they investigated the possibilities of a shorter run, with the result that they obtained 89·2 therms per ton." The yield should read "81·2 therms per ton."

New Showrooms have been opened by the Lancaster Corporation in Market Square. The opening ceremony was performed by the Mayor, Councillor J. G. E. Clark. The showrooms are centrally heated by a gas-fired boiler, and the lighting is carried out by ventilating ceiling lights. The demonstration room is capable of seating 100 persons and is equipped with kitchen cabinets, built-in refrigerator, and clothes-drying and airing apparatus.

Cooking and Washing Demonstrations were features of a gas exhibition at the Public Rooms which was opened on Dec. 2 by the Mayor of Bodmin, Lieut.-Col. F. M. M. Bawden. The Mayor described the exhibition as one more step in the right direction of keeping Bodmin to the front and seeing that it was made modern and thoroughly up-to-date. The Bodmin Gas Company was one of the oldest and one of the most flourishing businesses in the town, and he congratulated them on that fact and on their choice of management.

Indignation at Unsatisfactory Electrical Supplies has been roused in certain quarters of Scotland, and as a result two public bodies are addressing strong protests to their supply authorities. Buckhaven and Methil Town Council are asking what is being done to prevent the recurrence of the recent failures of supply, and, at the annual general meeting of Cumnock Merchants, complaints were voiced regarding the poor service of electricity supplied by the Ayrshire Electricity Board. It was stated that there had been several breakdowns and some streets had been left in complete darkness for several nights in succession. One member stated that in testing the light he found that a two-light gas burner provided much better illumination than a 100-watt lamp.

[Forthcoming Engagements on page 793.]

The British Gas Federation

Second Annual Dinner

The President, the Rt. Hon. Lord Macmillan, presides over a gathering of 813 members and guests at the 2nd Annual Dinner of the British Gas Federation at Grosvenor House, Park Lane, London, W. 1, this evening.

The official guests include Members of H.M. Government and of both Houses of Parliament, senior Government and Local Government Officials, Presidents of Kindred Associations, Educationalists, Scientists, Industrialists, Editors, and others prominent in public, professional, and business life.

The speakers will be Lord Kennet, Lord Macmillan (President), Sir David Milne-Watson (Chairman of the Council of the B.G.F.), and the Viscount Falmouth.

Lord Macmillan will be succeeded as President after the Dinner by the Rt. Hon. the Earl of Dudley.

Wandsworth and Leatherhead Gas Companies' Amalgamation Order

The Board of Trade Order for the amalgamation of the Wandsworth and District Gas Company and the Leatherhead and District Gas and Lighting Company, which would normally become operative when Parliamentary approval was obtained, is exciting keen opposition from both the Leatherhead Urban District Council and gas consumers in Leatherhead and the surrounding districts. At a Special Meeting of the local Council held on Thursday last, it was decided to instruct the Council's Parliamentary Agents to appear before the Special Orders Committee of the House of Lords, with a view to asking permission to petition against the Order. A public deputation was in attendance at the Council Offices for the purpose of entering a protest against the amalgamation Order, but the Council decided not to hear the deputation, on the ground that they were already taking steps in the direction desired. A further Special Meeting of the Law and Parliamentary Committee of the Council will be held on Thursday, 12th inst., to consider the terms of the case which the Parliamentary Agents will lay before the House of Lords in support of their application for permission to petition against the Order.

The Women's Gas Council

Formation of a Branch at Warrington.

A series of Cookery Demonstrations by Miss Linford, of Messrs. Radiation Ltd., in the new showrooms of the Warrington Corporation Gas Department this week was the occasion of the formation of a Branch of the Women's Gas Council.

A special meeting was arranged on the evening of Dec. 4, the chair being taken by the Mayor, Alderman J. Poole, J.P., who is Chairman of the Gas Committee.

Supporting the Mayor among others were the Mayoress and the Engineer and Manager, Mr. A. Cook, M.Inst.Gas E.

Miss Halpin, the Organizing Secretary of the W.G.C., addressed the meeting, and congratulated Warrington on being the first town in Lancashire to form a Branch.

The following officers were appointed:

President.—Mrs. Brearton Fairclough.

Vice-Presidents.—The Mayoress (Mrs. Alderman Poole), Mrs. A. Cook.

Joint Secretaries.—Mrs. Oakes, Mrs. Burton (wife of the Assistant Engineer).

Treasurer.—Mrs. Lee.

The only officer directly connected with the Gas Department is the Secretary (Mrs. Oakes), who is the Showroom Assistant and Cookery Demonstrator.

Bradford.

Miss Halpin will address the Inaugural Meeting of the Bradford Branch of the Women's Gas Council which will be held on Thursday, Dec. 12, at 3 p.m., at Britannia House, Bradford.

Co-Operative Advertising

Encouragement from B.C.G.A. Success

Sir Francis Goodenough, C.B.E., spoke at the Provincial Weekly Newspaper Association luncheon held on Dec. 3. During the course of his speech, Sir Francis mentioned that next year the B.C.G.A. would be celebrating its Silver Jubilee, and, at the end of 25 years' experience of co-operative advertising, his faith in co-operative advertising was definitely greater than ever.

In proposing a vote of thanks to Sir Francis, Mr. Richard Gibbs remarked that it seemed to him that the work the B.C.G.A. was doing on behalf of the Gas Industry in this country had a direct analogy to the work that the Provincial Weeklies Association was trying to do on behalf of the local weekly newspapers of this country. The B.C.G.A. success, he said, encouraged them to push forward their work with renewed vigour.

Southport Gas Estate

Visit of the Corporation

Members of the Southport Corporation Gas Committee together with other members of the Town Council visited the Corporation Gas Estate at Crowlands on Nov. 28. It was stated that the Works cover an area of approximately 25 acres and the plant is now capable of producing 6 million cu.ft. of gas daily in addition to many by-products.

Mr. J. Herbert Clegg, the Engineer and Manager, told the Committee that he had no fear for the Gas Industry of the future or for the Southport Undertaking, which at the present time was selling its commodity at an average price which compared favourably with the majority of undertakings in the country. His ambition was for the undertaking to go further ahead and to be in the first half-dozen. Councillor W. Lea, the new Chairman of the Committee, presiding at tea, said during the last few years he thought there had been a tendency by the Town Council to neglect the Gas Department in the light of the glamour which had been thrown around the national policy of development of the sister industry of electricity supply. The gas estate carbonized annually 45,000 tons of coal and produced annually 800 million cu.ft. of gas. Just now they were using over 1,000 tons of coal per week and no smoke was produced in making this supply of gas. This consumption provided continuous work for 120 colliery workers, and 220 employees were permanently employed by the Department. The Department paid rates to the tune of £5,000 a year, just as a gas company had to do, and after paying its loan charges and redeeming annually some part of its capital had already paid over £294,000 to the relief of rates, and last year contributed £3,800. The capital outstanding on the Undertaking was only £260,000 for a concern for which there would be buyers at the present time who would give for it from two to three times that sum.

Town Gas as an Industrial Fuel

Mr. H. R. Hems Addresses Engineering Association

That the time has arrived when gas had achieved its rightful place as one of the most important fuels available for industrial heating processes was the view expressed by Mr. H. R. Hems (Chief Assistant in the Industrial Heating Section of the City of Birmingham Gas Department) when he addressed members of the Engineering and Shipbuilding Draughtsmen's Association at Worcester on Nov. 27 on "The Place of Town Gas as an Industrial Fuel."

This is generally admitted by all thinking engineers and metallurgists who have to make use of fuels in their works processes, and who realize the general suitability, flexibility, and economy of gas as a fuel, said Mr. Hems.

The Gas Industry intends that its industrial load shall be many times greater than at present, and is catering by every means in its power to provide a fuel at economic prices, of constant composition, and under conditions of supply likely to meet the major demand, and a technical service second to none.

To-day gas undertakings throughout the country can point to greater demands than ever before—and this despite competition of the keenest order from both fuel oil and electrical energy used as fuel. Now, more than ever, we are realizing that as a nation we should use whenever possible our home produced fuels. The "Back to Coal" movement was of vital importance to the nation, but the progress of engineering and science must not be forgotten, and he was convinced that in a large number of heat treatment and metallurgical operations involving fuel use, "Back to Coal" could only be achieved through gas as a derivative of coal.

A supply of town gas in a works ensures that a manufacturer, his works engineer, and manager are free to devote their time to the production of the particular article they are manufacturing, without worrying about the means of generation of heat for any of their processes. Only a few years ago the utmost which could be expected in efficiency from the direct-fired Bunsen burner type furnace was about 20%. To-day efficiencies as high as 60% are obtained in practice from recuperative and regenerative furnaces.

Gas is used in the manufacture of the modern automobile in a greater extent than any other fuel, said Mr. Hems, remarking that the furnaces in the hardening shops of Wolseley motors had recently been completely changed over to town gas firing with improvement in efficiency and equivalent or lower running costs.

Rating of Portsmouth Gas Company

Assessment Doubled

The Portsmouth Assessment Committee have increased the assessment of the Portsmouth Gas Company from £14,000 to £28,000, an increase of 100%. When the matter came before the Committee on Nov. 28, the Rating and Valuation Officer, Mr. E. S. H. Eades, stated that the valuation of the Gas Company had been reconsidered in consequence of legal decisions relating to such companies.

The valuation of the Portsmouth Company, on the figures of an outside valuer, was £14,417, and on the instructions of the Rating Committee he compiled a new valuation, to which the Company objected. There was at the time a case pending between the Southampton Gas Company and the County Valuer at Winchester, but it did not go any further than Quarter Sessions, and the Southampton Company lost their case. Further negotiations followed between himself and the Portsmouth Company, and it had now been agreed that the new valuation of the latter should be £28,000. A letter was read from Messrs. Ryde, Sons, & Browne, valuers, on behalf of the Company, in which the new valuation was accepted, and it was stated that there were several points of principle which had been generously accepted by the Gas Company in the settlement.

The figures were approved by the Committee, and come into operation from the beginning of the present quinquennial period, April, 1934.

The Fire Offices' Committee Testing Station

Gas-Fired Furnaces for Testing Specimens

The Duke of Kent opened, on Nov. 26, a new Testing Station which has been erected and equipped by the Fire Offices' Committee—an organization comprising all the Tariff Fire Insurance Companies. The station is built on a site covering 1¾ acres at Boreham Wood, Elstree, and consists of two separate buildings, an Appliances Building and a Fire Testing Building.

In the Appliances building will be continued the work which the Committee has been doing for many years at their Station, now closed, at Manchester—the examination and testing of various appliances such as Sprinkler Heads, Sprinkler Valves, Portable Fire Extinguishers, and Automatic Fire Alarm Systems. The Fire Testing Building is an entirely new departure. The development in recent years of new building materials and new methods of construction revealed the need for some standard method of assessing the fire resisting qualities of the various elements in the construction of a building, and the British Standards Institution evolved a specification containing Standard Definitions for "fire resistance, incombustibility, and non-inflammability of building materials and structures," and formulated the tests to be applied. The Specification (No. 476) establishes five grades according to the severity of the test applied.

The Fire Testing Building contains three gas-fired furnaces by Radiant Heating, Ltd., Radiant Works, Harmood Street, N.W. 1, each capable of testing specimens of the dimensions required by the above Specification according to the time-temperature curve there laid down. The temperatures range from 1,000° F. to 2,200° F. and the periods of exposure from half an hour to six hours. Special machinery, working under pressure up to 4,500 lb. to the sq.in., has been provided for applying the necessary load to the wall and column specimens while under test and to meet the requirements of this machinery the furnaces have been made mobile and mounted on rails. An interesting feature of this building is that all the many controls and recording instruments have been centred in one control room from which the whole of the floor of the Fire Testing Building can be kept under observation. In planning the building and plant, the Department of Scientific and Industrial Research have closely co-operated with the Fire Offices' Committee.

Yorkshire Junior Gas Association

Meeting at Shipley

Members of the Yorkshire Junior Gas Association met at Shipley on Nov. 23 to hear the Presidential Address of Mr. J. W. Carlton, Distribution Superintendent to the Shipley Gas Department, which is published on later pages of this issue.

By courtesy of the Urban District Council, the meeting was held in the Council Chamber at the new Town Hall, where the visitors were welcomed by Councillor W. S. Tinsley (Chairman of the local authority). Councillor Robson (Chairman of the Gas Committee) was unable to be present, but the Gas Committee entertained the party to refreshments after the meeting. Mr. E. R. B. French (Leeds), senior Vice-President of the Association, presided over the meeting and was supported by Mr. H. Burton (Engineer and Manager to the Shipley Gas Department).

Following the meeting, the party were enabled to inspect the central heating installation of the Town Hall, which was opened last year.

The heating installation is a low-pressure gas-fired hot water system with ventilating inlet radiator fixed in the window recesses.

The various rooms and corridors are heated by hot water radiators, the total radiating surface being 4,250 sq.ft.

The radiators in the Council Chamber, members' retiring rooms, and committee rooms are enclosed in the wainscoting, with controllable fresh air inlets behind each. The installation is a one pipe drop system with the flow main carried to the top floor, where it divides. "Drop Pipes" are taken down at various points passing through the rooms on each floor to the basement, where they unite in a common return, on which is fixed an electrically driven accelerator circulating 66 gallons of water per minute.

The gas-fired "Vesta" boilers which were supplied by Auto-control Boilers, Ltd., have a total rated capacity of 2,000,000 B.Th.U. per hour. There are two boilers, one of three sections and one of two sections, to give the necessary flexibility to meet varying demands. Each boiler is controlled by "Drayton" thermostat in the return water. Further control is given by a "Drayton" air thermostat, so that the temperature of the whole building can be maintained at a pre-determined level, according to the outside temperature. This thermostat is fixed in the basement.

London Juniors Visit the Vauxhall Motor Works

A visit was paid to the Works of the Vauxhall Motor Company at Luton by over eighty members of the London and Southern District Junior Gas Association on Dec. 4.

The vast Works, employing over 7,000 men, leave one with a predominating impression of orderly efficiency. Although over one thousand cars leave the premises every week, there is no confusion or hustle; everything goes according to plan, and the various processes of manufacture follow one another smoothly until the completed car runs off the finish of the assembly line under its own power, to take the road with an expert inspector. It was really fascinating to find in so vast a factory perfect co-ordination existing between the many different processes. To give one example, although the body-work travels on an assembly line entirely separate from the chassis line, where the two lines meet there arrive simultaneously the chassis and its particular body.

More than 10% of the population of Luton directly depend upon Vauxhall Motors for their livelihood. The production control division alone is involved in over a million calculations each month after the forecast committee has decided what shall be made. As a further example of the magnitude of the work involved in the manufacture of the Vauxhall car, there are more than 7,500 complete parts to be assembled, involving 15,000 separate operations, and about 11,000 different inspection checks. Every activity is organized scientifically and then studied and timed to ensure expedition with the minimum of manual effort.

Of more particular interest to the visitors was the news that the Company use over $1\frac{3}{4}$ million cu.ft. of gas per week. This is supplied by the Luton Gas Company, and is used in many processes, including the case hardening of material in Lucas furnaces, which are all controlled from a central room, and to assist in the ready location of gas and other pipes they are each painted with a distinctive colour.

Many marvellous machines were seen by the visitors, including the elephantine "Bliss" power presses which, with impressive ease, persuade flat "Armco" steel sheets to become wings, panels, bonnets, and the like; multiple drilling machines which drill sixty holes at once; another machine which threaded forty-six holes simultaneously; and plant for boring six-cylinders together.

The tour of the Works over, the company were entertained at tea on the kind invitation of Vauxhall Motors in their mammoth canteen, where more than 3,000 meals are served each working day.

A hearty vote of thanks to Mr. Northam, the Sales Promotion Manager, and to the Directors of the Company for their kind hospitality and a very enjoyable visit was ably proposed by the President, Mr. J. M. Webber, who coupled with the vote the name of Mr. Holtom, who had made all the arrangements for them to be guided around the factory. The Company and the Juniors had common aims; they were both trying to produce as efficiently as they possibly could, and they both believed that the secret of success was to offer the finest value for money.

In seconding, Mr. Roy Summerson, Senior Vice-President, said he was delighted to have the opportunity of supporting the President, as he was in a small way responsible for the visit. He had suggested that a visit to the Works would be of interest in view of the large quantities of gas that were being used there. As a member of the staff of the Luton Gas Company, he was glad to have the opportunity of telling them how glad the Gas Company were to see them using more and more gas.

Responding on behalf of Vauxhall Motors, Mr. Northam said they were delighted that the visitors had enjoyed themselves, and if they wished to come again they would be perfectly welcome.

International Gas Union

Meeting in Brussels

The Committee of the International Gas Union met in Brussels on Tuesday, Oct. 15 (Mr. A. Baril, President, being in the Chair), at the invitation of the Belgian Gas Companies' Association. The meeting was held in the Administrative Building of the Brussels Universal and International Exhibtion.

In addition to Mr. A. Baril, President (France), the following were present:

Messrs. F. Escher, Honorary President (Switzerland); H. Müller, Vice-President (Germany); J. de Brouwer, Vice-President (Belgium); C. Valon Bennett, Vice-President, and W. T. K. Braunholtz (Great Britain); M. Böhm, Vice-President (Italy); G. A. Brender à Brandis, Vice-President (Netherlands); Th. Keclik, Vice-President (Czecho-Slovakia); Messrs. M. Lebon, President, W. Grimm, and G. Reclus, Reporters of the Research Commissions; Mr. P. Mougin, General Secretary.

After letters of apology had been read from those of its Members who were unable to take part in the meeting, the Committee again expressed its condolence with the Belgian Gas Companies' Association over the death of Mr. Maurice Perier, Vice-President of the International Union.

The Committee dealt with a certain number of administrative questions and had pleasure in recording the nomination of the following as new Members of the Board: Mr. J. de Brouwer, Delegate of the Belgian Gas Companies' Association, who replaces Mr. Perier, deceased, as Vice-President; Mr. C. Rampone, Delegate of the Federazione Nazionale Fascista Industriali Gas e Acquedotti, to replace Mr. Mazzetti, who had resigned; Mr. A. Danielson, second delegate of Svenska Gasverksforeningen.

The Committee then heard the report of the work of the International Commissions which met in Brussels on Oct. 14 to examine the following questions:

- "Co-ordination of the Methods of Testing and Guaranteeing Gas Making Plants." Commission presided over by Dr. H. Müller, of Dessau;
- "Systems of Carcassing Buildings." Commission presided over by Mr. M. Thoma, of Bale;
- "Co-ordination of Methods of Testing Gas Appliances." Commission presided over by Mr. M. Lebon, of Paris; and
- "Methods for Rate Making." Commission presided over by Mr. F. Escher, of Zurich.

At the suggestion of "Usogaz," the Swiss gas propaganda organization, the Committee also decided upon the creation, within the International Gas Union, of a new Commission for studying propaganda questions, this Commission to be presided over by Mr. C. Valon Bennett (Great Britain).

Lastly, the Committee fixed the next full meeting of the Board for Saturday, March 14, 1936, in Paris, the meetings of the Research Commissions to be held on the two preceding days.

Private Bills to be Introduced in 1935-36

A *Precis* of the Clauses affecting gas interests.

Cirencester Gas Bill.

A Bill to incorporate and confer powers on the Cirencester Gas Company. The Bill provides for the dissolution of the present Limited Company and its incorporation in the name of the Cirencester Gas Company. The capital of the new Company is to be £50,000. The limits of supply will remain the same as before. A scheme of profit-sharing is provided for if the majority of proprietors approve.

[*Agents: Martin & Co.*]

Thornton Cleveleys Improvement Bill.

Part VII. provides for the transfer of the Poulton Gas Company to the Council for the sum of £1,000. Accordingly, the gas limits of the Thornton Cleveleys Council will be extended to include those of the Poulton Council.

[*Agents: Sharpe Pritchard & Co.*]

Hereford Corporation Bill.

A Bill laying down further powers with reference to the water, gas, and markets undertakings.

Part III. of the Bill provides for the extension of Hereford gas limits and to supply premises partly without the gas limits.

Clause 52 gives power to purchase material for the conversion of residual gas products. Clause 53 provides for the fitting up of offices and showrooms, while other clauses deal with general questions of administration.

[*Agents: Sharpe Pritchard & Co.*]

Coventry Corporation Bill.

Part V. of the Coventry Corporation Bill gives power to the Corporation to extend their gas limits so as to include "so much of the parish of Meriden in the rural district of Meriden in the county as lies to the east of an imaginary straight line of infinite length passing through two points on the boundary of the said parish situated as follows:

(*a*) On the centre line of the footpath leading from the Birmingham-Coventry main road to the Meriden-Maxstoke Road opposite Old Farm; and
(*b*) south-east of and five thousand one hundred feet from the most westerly point of the said parish."

[*Agents: Sharpe Pritchard & Co.*]

Fishguard and Goodwick Urban District Council Bill.

The purpose of this Bill is to transfer to the Urban District Council of Fishguard and Goodwick the Undertaking of the North Pembrokeshire Water and Gas Company; to authorize the Council to construct new waterworks and supply water and gas; and for other purposes. The Bill provides for the expenditure of £1,500 on construction of new gas-works, and £8,500 for new gas mains, extension of gas mains, and other gas-works purposes. The transfer of the undertaking to the Council is to be determined in accordance with the Lands Clauses Acts. The officers and servants of the Company are to be taken over, and the limits of the Council for the supply of gas are to extend to and include "the district and the parishes of Llanwnda Manorowen and Fishguard South in the rural district of Haverfordwest." The prices charged by the Council are not to exceed 1s. 9d. per therm within the district and 1s. 10d. per therm outside the district.

[*Agents: Lees & Co.*]

Dalton-in-Furness Urban District Council Bill.

This Bill is to provide for the transfer to the Urban District Council of Dalton-in-Furness of the Dalton Gas-Works; to confer further powers upon that Council with respect to their gas and other undertakings. The Bill states that an estimate has been prepared by the Council providing for the expenditure of £20,000 on alteration and enlargement of the Council's gas-works, and gives them power to maintain and continue the gas-works to be taken over. Clause 21 states that the price of gas supplied by the Council is not to exceed 1s. 6d. per therm.

[*Agents: Sharpe Pritchard & Co.*]

Gas Light and Coke Company (No. 1) Bill.

This Bill is to empower the Gas Light and Coke Company to raise additional capital not exceeding in the whole three million pounds by the creation and issue at their option of ordinary stock or of preference stock or wholly or partly by one or more of those modes respectively.

[*Agents: Dyson Bell & Co.*]

Gas Light and Coke Company (No. 2) Bill.

This Bill is to give the Company power to supply gas in certain cases. The preamble states: "To confer upon the Gas Light and Coke Company powers with reference to the making of provision for supplies of gas in certain cases; and for other purposes." The Bill accordingly provides that Housing Authorities shall afford facilities for the provision of gas pipes, &c., in buildings in the process of erection. The preamble also states: "And whereas the councils of the boroughs and urban and rural districts in the limits of supply of the Company (certain of whom carry on undertakings for the supply of electricity) are for the purposes of the Housing Acts the local authorities for their respective areas and have provided and are in process of providing or will hereafter be called upon to provide housing accommodation for the working classes and in so doing have expended and will require to expend large sums of money raised on the security of the rates leviable by them to which the Company contribute as ratepayers. And whereas, with a view to securing to the tenants of houses provided by the said local authorities and others *a freedom of choice* which had been denied to them by certain of those authorities as to form of heat, light, power, and energy to be supplied to or used in such houses, it was (*inter alia*) enacted by the Gas Light and Coke Company's Act, 1933, that the councils of the counties, boroughs, and urban and rural districts in the limits of supply of the Company should not in or in connection with the selling, leasing, letting, or otherwise disposing of buildings or parts of buildings or land for the time being belonging to them or leased to them make or impose any term, condition, or restriction with respect to the form of heat, light, power, or energy to be supplied or used in such buildings or parts thereof or in buildings erected on any such land. And whereas such of the said local authorities as carry on electricity undertakings are in a position to supply electricity to those of their tenants who may require such a supply, and with that object in view it is the general practice of the said local authorities to install the necessary wiring for a supply of electricity or to provide for such installation in the houses erected by them and in the course of such erection. And whereas it is expedient in order to give full and due effect to the object with which the provisions hereinbefore referred to of the said Acts of 1933 and 1934 were enacted that provision for a supply of gas in buildings erected by such local authorities and the several parts of such buildings should be made in the course of such erection, but in the case of certain of such buildings the Company have been denied the necessary facilities for that purpose by the local authority responsible for the erection thereof."

[*Agents: Dyson Bell & Co.*]

Imperial Continental Gas Association.

A Bill to extend the objects of the Imperial Continental Gas Association.

Powers are sought in this country to manufacture, generate, produce, purchase, or otherwise obtain and to sell or to supply either exclusively by means of its own capital and property or in conjunction with any other company but subject to the granting of any necessary statutory sanctions gas, electricity, or other means of producing light, heat, or power, whether now known or hereafter to be discovered. To establish, purchase, take on lease, hire . . . any undertaking for the manufacture, &c.

Powers are sought in any part of the world to purchase or acquire and to hold, &c., any rights, contracts, concessions, or privileges connected with or incidental to the foregoing objects whether alone or in conjunction with any other company. To carry on or be concerned . . . in the business of refrigeration and other methods of cooling and the production, manufacture, and supply of and dealing in machinery, plant, and other apparatus . . . in connection with such business. To carry on business in which the use of electricity, gas, or other form of energy is requisite, &c. . . . To produce, buy, sell, and deal in, treat, refine,

distil, blend, store, and otherwise turn to account any products derived directly or indirectly from coal or mineral oil or any other products arising in connection with the production of any means of any form of energy, and to carry on any trade. . . . To carry on or be concerned with . . . the business of producing, treating . . . coal, mineral oil, patent, and other fuels and similar products. To carry on the business of engineering in all its branches, including civil, electricity, gas, mechanical, heating, ventilating, and sanitary engineering. To carry on . . . such public utility service . . . as may be deemed . . . to be incidental or conducive to the attainment of any of the objects of the Association. To acquire and hold shares, stocks, obligations, and securities of all kinds of or in any government, state, or company constituted . . . in any part of the world, including (but without limiting the generality of the foregoing) such investments in any company carrying on the business of manufacture, generation, production, or supply of gas, electricity, or other means of producing heat, light, or power in any part of the United Kingdom.

[*Agents: Slaughter & May.*]

Skegness U.D.C. Bill.

Part III. of this Bill provides that the maximum price of gas supplied by the Council outside the district shall be sixteen and three-fifths of a penny per therm. Further powers are taken with regard to fittings and the improper use of gas.

[*Agents: Lees & Co.*]

South Metropolitan Gas Bill.

The purposes of this Bill are to extend the limits of supply of the Company to include in addition to the existing limits that part of the urban district of Chislehurst and Sidcup situate on the north-west side of the centre of Elmstead Lane which prior to the Kent Review Order, 1934, constituted part of the parish of Mottingham in the rural district of Bromley.

In Clause 5 it is stated that the standard or unit of measure for the sale of gas by the Company shall be the number of therms supplied in the form of gas and the number of therms supplied by the Company to any consumer shall as the Company may elect be ascertained. Clause 6 states that if at any time the Company intend to alter the declared calorific value in the whole or any part of the limits of supply the Company shall give notice by advertisement in the *London Gazette* and by notice in writing to the Board of Trade, to the L.C.C., and to the council of each metropolitan borough and urban district within or partly within the limits of supply or such part of the limits of supply as the case may be. Clause 9 provides that the minimum pressure of gas supplied by the Company shall in any main or in any pipe laid between the main and the meter having an internal diameter of two inches or more be such as will balance a column of water not less than two inches in height. Clause 12 provides for the appointment of an additional Director. Clause 13 states that employees' Directors shall be additional to ordinary Directors. Clause 16 provides that the Company shall not later than in the session 1941 promote a Bill giving an opportunity for the amount of the basic price prescribed by Act of 1920 to be revised.

[*Agents: Sherwood & Co.*]

York Gas Bill.

A Bill to confer upon the York Gas Company powers with reference to the making of provision for supplies of gas in certain cases. The Bill makes provisions in precisely the same terms as the Gas Light and Coke Company (No. 2 Bill).

[*Agents: W. H. Cobb & Son.*]

Tring Gas Bill.

A Bill to incorporate and confer powers on the Tring Gas Company. The Bill provides also for the taking over of all the property owned by the Tring Gas Light and Coke Company. All the officers and servants of the original Company are to be taken over on the same terms and conditions. The capital of the Company is to be £25,000, of which £11,000 is to be "original capital" and £14,000 "additional capital." Powers are given for the raising of additional capital to the extent of £14,000. Clause 20 provides that the company may borrow on mortgage or by the creation of debenture stock up to £5,500. The first Directors of the Company are to be William Albert Scott, Albert Ernest Scott, Henry Thomas Mainwaring, and Walter Bridges. The limits of the Company are to be the Urban District of Tring and the Parish of Tring Rural in the Rural District of Berkhampstead and the Parishes of Marsworth, Pitstone, Ivinghoe, and Cheddington, and so much of the Parish of Edlesborough as lies to the north of the centre line of the main Ivinghoe to Dunstable Road in the Rural District of Wing in the county of Buckingham. The price of gas supplied is to be fourteen decimal five pence per therm and that price is to be the Standard price.

[*Agents: R. W. Cooper & Sons.*]

South Suburban Gas Bill.

To confer further powers upon the South Suburban Gas Company. Clause 4 of the Bill provides that the Corporation may erect on the land described in the schedule equipment for the storage of gas. The lands referred to are in the Rural Districts of Dartford, Sevenoaks, Crayford, and Orpington. Powers are also taken to lay pipes for ancillary purposes. Special provisions are made for the benefit of small investors, the purchase and cancellation of company's securities, a renewal fund, and other matters.

[*Agents: Sherwood & Co.*]

Athletic and Social

York Gas Company's Employees' Club.

A new club at 84, Monkgate, York, for the employees of the York Gas Company, was opened on Nov. 29 by Mr. H. E. Bloor, Engineer, Manager, and Secretary.

There was a very large attendance, and the club was given a splendid start.

The premises, which have been converted from an ordinary dwelling-house, have all the amenities which a club has to offer, and comprise a lounge, reading room, billiard room, and steward's quarters. The fittings are extremely modern and comfortable, and the new venture should prove a great success.

Mr. J. L. Goodwill is Secretary of the club, and Mr. Bloor is the first President.

The opening ceremony was followed by a concert, arranged by Mr. W. Atkin.

Mr. S. Rawcliffe proposed, and Mr. J. Atkinson seconded, a vote of thanks to Mr. Bloor, and to the Directors of the York Gas Company for providing the club for the employees.

Annual Staff Dinner at Bradford.

The staff of the Bradford Corporation Gas Department held their Annual Dinner on Nov. 23 at the Victoria Hotel, Bradford. Mr. G. E. Currier, Gas Engineer, occupied the Chair. Among the guests were Alderman F. J. Cowie (Chairman of the Gas Committtee), Alderman A. Ward (Deputy Chairman) and Mrs. Ward, Mr. George Walker (ex-Chairman), Mr. C. Wood (former Gas Engineer) and Mrs. Wood, and the guests of honour, Mr. S. H. Packer (Showrooms Manager and Fittings Superintendent) and Mrs. Packer.

Mr. Currier welcomed the guests and said that it was very pleasing to see the staff and their ladies, and felt that the social side of the Department ought to be extended; if this could be done he would be pleased to help. Mr. Currier went on to say that everyone was aware that Mr. Packer was taking up a new appointment in Manchester very soon and he would like to take the opportunity of expressing his appreciation of Mr. Packer's services with the Bradford Corporation Gas Department; during the period Mr. Currier had been at Bradford he had found Mr. Packer most capable and very enthusiastic. Alderman Cowie in his remarks said he would like to add his quota of appreciation of Mr. Packer's services.

Mr. Currier then asked Mr. Packer to accept as a mark of appreciation from his colleagues a suitably inscribed gold wristlet watch, and to Mrs. Packer a chrome and glass coffee table was presented.

On Nov. 26 presentations were also made at the Stoves Stores, Mill Street Gas-Works. On behalf of the Stores, Mr. J. Wilson presented Mr. Packer with a writing set, together with a case of pipes and lighter, and for the Maintenance Staff, Mr. H. Barwick presented another writing set.

The Midland Junior Gas Association

Anniversary Dinner.

To commemorate the 30th Anniversary of the formation of the Midland Junior Gas Association, a Dinner was held at the Imperial Hotel, Birmingham, on Dec. 5— under the Presidency of Mr. F. L. ATKIN, A.M.I.Mech.E.

No fewer than twenty-five out of the twenty-nine Past-Presidents of the Association were present to receive from the hands of Mr. Stephen Lacey (Senior Vice-President of The Institution of Gas Engineers) badges to mark their Presidency of the Association, and many names to-day well-known in the Gas Industry are to be found in this noteworthy list:

1905-6	F. J. Bywater	1922-23	C. F. W. Rendle
1906-7	G. W. G. Tatam	1923-24	L. H. Thomas
1908-9	J. Hewett	1925-26	J. H. Gee
1910-11	R. S. Ramsden	1926-27	C. F. Tooby
1911-12	R. J. Rogers	1927-28	H. R. Hems
1912-13	F. Shewring	1928-29	F. C. Caudwell
1913-14	W. H. Johns	1929-30	A. R. Myhill
1916-17	G. C. Pearson	1930-31	W. Macnaughton
1917-18	R. G. Marsh	1931-32	W. L. S. Spinks
1918-19	T. H. Poulson	1932-33	F. A. C. Pykett
1919-20	C. C. Barber	1933-34	S. K. Hawthorn
1920-21	W. J Pickering	1934-35	J. H. Wainwright
1921-22	W. Batt		

The four Past-Presidents absent were:

1907-8	W. E. Caton	1914-16	F. J. Ward (deceased)
1909-10	A. O. Jones	1924-25	H. Clark

The Association was formed on July 13, 1905, as a result of a meeting called by the President and Hon. Secretary of the Midland Association of Gas Managers—Mr. T. Berridge, of Leamington, and Mr. C. Meiklejohn, of Rugby. The initial membership was 55, which grew to 103 before the first Annual Meeting held on Nov. 4, 1905. The Association was formed under the title of "The Midland Junior Gas Engineering Society," which was altered in 1911 to its present title so as to embrace all branches of the Industry. The membership at the present time is 293, excluding 18 honorary members.

The Loyal Toast having been duly honoured,

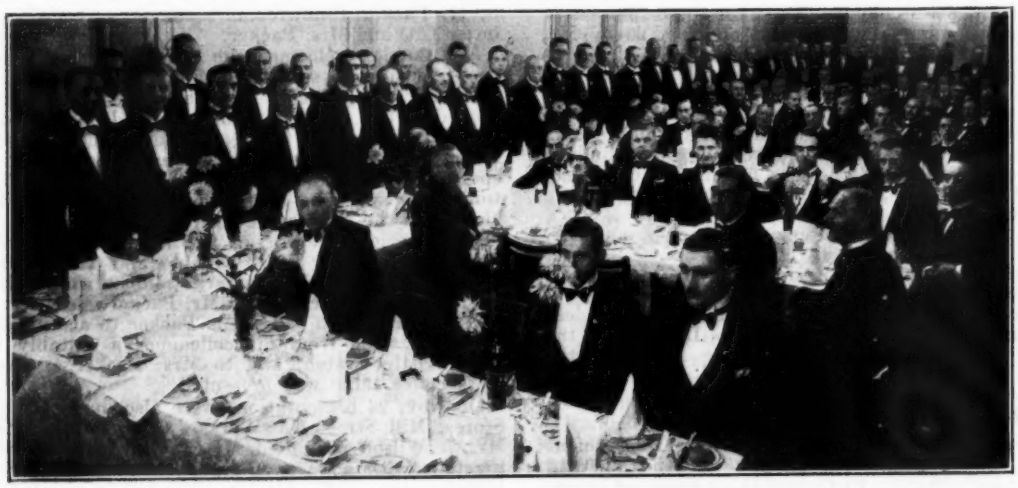
The PRESIDENT rose to propose the Toast of "Our Guests," and in doing so he remarked that this was no ordinary occasion. This dinner was being held not only to celebrate the 30th anniversary of the formation of the Midland Junior Gas Association, but also to honour their Past-Presidents and guests. When the Council had the Association's balance-sheet under consideration last year several suggestions were made for utilizing some of the available balance to the mutual benefit of both the members and the Association. One of those suggestions was that the subscription should be reduced; but when they considered the undoubted advantages and privileges to be gained by membership of the Association they thought that their subscription of 10s. was a very modest one. So it was decided in the first place to purchase badges of office for the President and also for the Hon. Secretary and the Hon. Treasurer. It was unnecessary for him to say how invaluable these two Officers were to the Association. Many who had occupied these positions realized what an enormous amount of work was involved. It was then thought that it would be a happy idea to present to each of their Past-Presidents a replica of the President's badge, which afforded a unique opportunity for getting all their Past-Presidents together—and the Council were extremely gratified at the result. Twenty-five out of the twenty-nine Past-Presidents were with them on that occasion.

They were greatly honoured, continued Mr. Atkin, in having Mr. Lacey with them, and they thanked him most heartily for his presence. The President went on to refer in turn to each of their distinguished guests, particularly those Seniors who had helped them in the past.

Greetings from the Institution.

Mr. STEPHEN LACEY, in responding to the Toast, said that it was his privilege and pleasure to represent The Institution of Gas Engineers on this occasion because the President, Col. W. M. Carr, was unable to accept the kind invitation of their Council owing to a prior engagement. He sent his greetings and best wishes, however. It was a happy idea to celebrate the 30th anniversary of the birth of their Association by honouring those who, individually and collectively, had been so largely responsible for its record of achievement, for its present robust state of health, and for its promise in the future. The previous week their Hon. Secretary, Mr. Hill, kindly sent him some information about their Association. He found it of interest; but the most remarkable thing, to his mind, was contained in the copy of the opening paragraph of the Address delivered by their first President thirty years ago. In that Address Mr. Bywater showed himself to be a wise counsellor, with an understanding of the importance of the commercial aspects of a gas undertaking's function that was rare thirty years ago, and very rare indeed among those whose primary technique was in gas making. In those days, said Mr. Lacey, the idea of going out to sell gas or gas appliances was considered scarcely decent, and certainly beneath the dignity of a Gas Engineer. That was no longer so; but it was still true that the commercial side was not nearly strong enough, and if the Junior Associations played their part to the full, there would spring from their ranks more and more men properly equipped with a background of sound technical knowledge and with a commercial sense and enthusiasm that would bring them into the front line of competitive selling and commercial administration. He did not wish them to think that he under-rated the part that had to be played by those engaged in technical development or service either on the works or on the district; but commercial and technical advances must be made simultaneously.

He was a great believer in general assurance as a good train-



At the Midland Juniors' Anniversary Dinner.

ing ground for real live and free-standing men. The members of Senior Associations were often constrained by a proper sense of responsibility and so were apt to be platitudinous—if he might say so with all respect. The Juniors ought to be light-hearted and outspoken at their meetings; they would learn caution soon enough when they became Seniors. In conclusion, Mr. Lacey said how pleased he was to be in Birmingham and to meet so many members of the Birmingham Gas Department—the largest and—if he might say so—the most progressive of all municipal gas undertakings in the country. This Association was obviously based on Birmingham, and it owed a great deal to Birmingham, as, indeed, did the whole Gas Industry.

Mr. Lacey then handed the badges to the Past-Presidents of the Association present.

The First President.

Major F. J. BYWATER, M.C., the first President of the Association, also responded on behalf of the Past-Presidents, saying how grateful they all were to the Association for asking them there on that occasion. It had revived many memories and had provided an opportunity of meeting many old friends. They were very much impressed with the work the Association was doing. The Midland Junior Association owed its inception to the parent Association—the Midland Association of Gas Engineers and Managers—and particularly to the kindly help of Mr. Berridge and Mr. Meiklejohn, President and Secretary respectively of the Senior body at that time. The Junior Association was started under their tuition and help. Looking back on those days he remembered vividly the desire of those two gentlemen to do something for the young men of their generation. Whatever success had attended the Association's efforts in later years the encouragement received at first was due to them.

Major Bywater went on to recall some of his early days in Birmingham. He did not know any centre so eminently suitable as Birmingham for the education of those engaged in the Gas Industry; examples of every phase of the Industry were to be found there. In that respect he would remind them that they belonged to a great Industry whose future depended upon what they made of their opportunities. There were many problems to be solved, some of which were extremely difficult. One of these was, "What was to be the next step in the heat treatment of coal?" Were they to carry on with the high temperature processes? Was there to be an intermediate stage whereby the liquid products formed a bigger part? Or were they heading towards complete gasification? He was convinced that a change was desirable if not imminent, because however efficient was their salesmanship, what they had to do was to produce more and more therms from each ton of coal treated. In connection with this problem, he recalled his Presidential Address to the Association thirty years ago, in which he had suggested the complete gasification of coal in producers working with oxygenized air. This latter had since been taken up at Leeds by Prof. Cobb, who was convinced that further research should be carried out. He urged them to continue to press for more money for research. It was surprising that, having regard to the millions of money which was spent on social services that so infinitesimal a sum was being allocated to research. This country had only one major raw material—coal—and they must utilize it to the best advantage. It therefore behoved them to be equipped with technical knowledge in order that they might play their part in this matter.

A subject which was rarely referred to in the Technical Press and one which they would not find dealt with in the text books was personality and character. He had been fortunate in being in close touch with two very fine men in the course of his career. One was Mr. Henry Hack, with whom he served his pupilage, and the other was Dr. Charles Carpenter. The latter was one of the finest men the Industry had ever produced, and when he had told him he was going there that evening, Dr. Carpenter had asked him to extend to the Association his congratulations and best wishes. That was his attitude towards the young men of the Industry. In the struggle for technical progress they must remember some of the older men who had inspired them, and he begged them always to play the game with themselves, with those with whom they did business, with their employers, and, above all, with the British workman, who was the finest workman in the world, and no one responded to good treatment as he did. In conclusion, he thanked the Association most heartily for their cordial welcome and assured them that they were all delighted to be with them.

Mr. G. W. G. TATAM and Mr. W. H. JOHNS, both Past-Presidents of the Association, also extended their thanks for the opportunity of being with them on that occasion and congratulated them on the valuable work they were doing and the way in which they had carried on the traditions of the Association.

The Milbourne Medal.

Mr. R. J. MILBOURNE then presented the Milbourne Medal to Mr. A. Knight for his Paper on "Recent Developments in the Construction of Dry Gas Meters" (see "GAS JOURNAL" for Feb. 20, 1935), adjudged to be the best Paper presented to the Midland Junior Gas Association during the previous session. In doing so, Mr. Milbourne congratulated the Association on the excellent gathering they had got together. It was pleasing to know that after thirty years of existence they had an excess profit and that, in accordance with the traditions of the Industry they were "distributing this among their consumers." Mr. Knight's Paper had been very useful, and Mr. Milbourne suggested that in the future they might be able to provide meters giving a direct reading, which would be of much greater value to consumers. It was with great pleasure that he handed the Milbourne Medal to Mr. Knight; he congratulated him on winning it and wished him every success in the future.

Mr. A. W. SMITH (General Manager and Secretary of the Birmingham Gas Department) proposed the Toast of "The Midland Junior Gas Association," and in doing so he paid tribute to the work of Mr. J. Hewett, the first Hon. Secretary of the Association. Without the hard work he put in in those early days the Association might have ceased to exist. He was very glad to be with them that evening to propose that Toast. From an original membership of 55, their numbers had grown to 293, and he understood that the applications now under consideration would bring their roll to 300. During the past three years five of their members had obtained the Diploma of The Institution of Gas Engineers, while twenty-six had obtained the Higher Grade Certificate in Gas Engineering or Supply. It was extremely gratifying to note that their members gave up their spare time in order to attend meetings and visits. It was to the Juniors that the Industry looked to carry on to the potential triumphs which lay before them, and he congratulated them upon the high standard they had maintained throughout their history.

Mr. J. H. WAINWRIGHT (Halesowen), the immediate Past-President, responded to the Toast on behalf of the Association, and thanked Mr. Smith for the manner in which he had proposed it. He hoped the Association would always merit the favourable comments made that evening. He was very pleased that so many of their early Presidents had lived through the past thirty years of the Association, and he spoke with every confidence for the future when he hoped that their life and vitality would long continue. He went on to refer to the many kindnesses the Association had received at the hands of Mr. Smith and the Birmingham Gas Department, and to the valuable work of their Hon. Secretary and Hon. Treasurer. As immediate Past-President he was fully aware of the tremendous amount of work they did for the good of the Association, which contributed in no small measure to their present success. They were also fortunate in having a Council which could be relied upon to conduct the affairs of the Association in the most able manner. Indeed, the Midland Junior Gas Association was being carried on in the way that the Past-Presidents would have desired, and it was very gratifying to know that their work was proceeding along such good lines. They would do their best to fulfil in the future the hopes that had been entertained in the past.

Gas Distribution*

There has, hitherto, been a gap in the German literature of the Gas Industry so far as the subject of the distribution of gas is concerned. The authors have set themselves the task of filling the breach and, though they have not done so quite completely, they have achieved sufficient to warrant the hope that they will soon be called upon to prepare a much more comprehensive treatise on the subject. They have succeeded in demonstrating that they are well fitted to do so.

The book commences with a general review of the importance of gas in the life of a nation, a survey of the various kinds of gas which are available for distribution and a consideration of holders, meters, governors, and boosters. The main theme is then developed. The authors lay great stress on the need for periodical surveys of the incidence of the load throughout the distribution system and of the pressure fluctuations thereby occasioned. Information of this nature may be obtained by means of automatic recorders and is indispensable when consideration has to be given to the problem of providing additional gas in particular localities. The various alternative means available for meeting these additional demands are outlined. In the case of new districts, the use of published Gas Industry statistics enables a very intelligent forecast to be made of the quantity of gas likely to be required over a period of years and the distribution system can be designed accordingly. The statistics needed are those dealing with *per capita* consumption of gas in relation to the occupation and social status of the population, the consumption per mile of main, the density of population, the type of dwellings—whether individual residences or flats—the nature of local trades and industries, &c. These statistics are also useful in enabling an estimate to be reached as to how far the use of gas in any district is removed from the saturation point.

With the aid of very detailed examples the principles involved are explained but the implications are not developed as fully as might have been desired.

A useful feature of the book is the historical survey of the formulæ which have been used for gas flow calculations in Germany from the time of Pole to the present day.

* Gasverteilung, by W. Bertelsmann and E. Kobbert, with the collaboration of F. Flotow, H. C. Gerdes, and F. Schuster. [Munich and Berlin, 1935, R. Oldenbourg. Pp. 184. Price RM. 9·60 bound.]

LONG SERVICE TO THE GAS INDUSTRY

A number of firms of long standing on the contracting and manufacturing side of the Industry have collaborated with the "JOURNAL" in the production of a series of articles, under the above title.

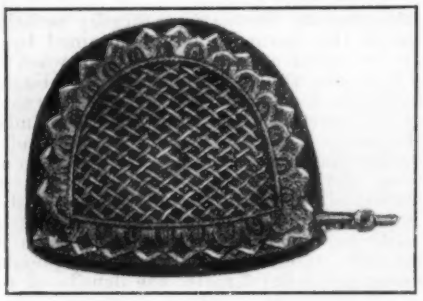
Radiation Limited

The story of the individual and collective contributions to progress in design and construction made by the firms constituting Radiation Limited is largely the story of the Gas Appliance Industry itself. To enumerate these developments in detail would provide material for many columns of the "JOURNAL," and it must suffice here to remind readers of some of the more outstanding.

It is many years since organized Research Work was first instituted as part of the activities of the Radiation Companies. The conception of the value of Research extended until each of the Firms had its own laboratory, and in course of time a Central Research Laboratory was established at Radiation House.

It is not possible to do more than merely indicate some of the items of Research Work carried out in the Radiation organization, but it is felt the claim can be made without exaggeration that arising from this pioneer Research Work many of the developments in the appliance industry have sprung. To name only a few instances, the following outstanding lines of Research may be mentioned: Systematic development of the methods of radiant heat determination resulting in the production of the Integrating Radiometer; the study of the character of the radiation from gas fires and other heaters, and the effect on the human body of radiation of different wave lengths in the red and short infra-red region; and the accurate determination of carbon monoxide in minute traces and, as a consequence, the propounding of standards of combustion to which various gas appliances should conform.

These are but a few examples of pieces of fundamental Research Work which have resulted in the improvement of



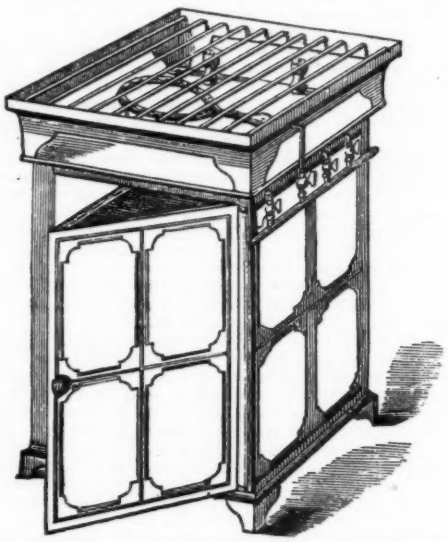
Tea Cosy Fire (1877). "The first Gas Fire."

gas apparatus, with the consequent strengthening of the position of the Gas Industry with the public.

Gas Fires.

Perhaps the most interesting landmark in gas fire design, and one which changed entirely all existing conceptions, was the introduction of the columnar radiant together with the radical departure from the old type of deep gas fire, with haphazard heating of a mass of material, to the present type with its shallow fire-front and complete combustion of the gas through the use of radiants designed to "fit" the flames. The columnar radiant has more than justified its introduction some 25 years ago, for the latest gas fires still incorporate the original conception.

Design has, of course, progressed step by step since then, and with it increased thermal efficiency and other characteristics, until the latest Radiation gas fire—the High "Beam"—embodies both columnar and "scrubber"



One of the earliest Cookers to be let out on hire (1873).

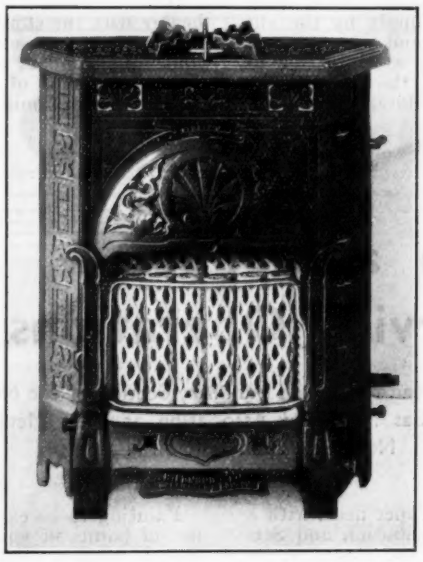
radiants, a construction which enables a marked saving in gas consumption to be effected, together with an increase in the radiant heat emitted.

Another development in gas fire design, arising from a piece of Research which in its early stages was of fundamental character, consists in the improvement in the type of energy emitted. It is gratifying that the laboratory investigation of the character of the radiation from heated bodies, beset as it was with difficulties caused by the effect on the instruments used of traffic vibrations and extraneous electrical disturbances, has resulted in the production of gas fires which emit energy containing a higher proportion of short infra-red rays, thus yielding a more comfortable warmth.

A prior advance which had done much to remove the prejudice against the early types of gas fire was the realization of the necessity for the complete removal of the products of combustion through the flue nozzle without the aid of chimney pull. This standard of performance was later endorsed by the *Lancet*, and the familiar test is now known by the name of that periodical.

In addition, and again accenting the health aspect, the

Terra Cotta Stove (1867).

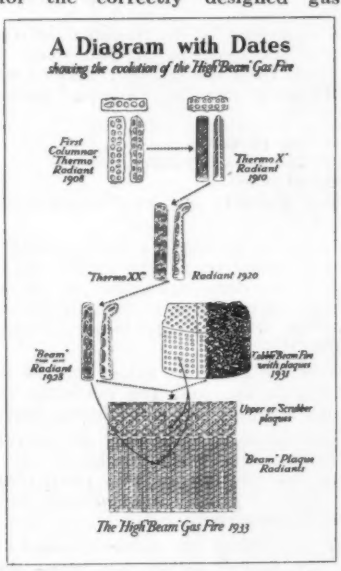


An Early Gas Fire.

Wizard Fire (1908).

"injector-ventilator" was devised by which the ventilating effect of Radiation gas fires was increased by a marked extent.

The cumulative effect of this aspect of gas fire development has been to remove, once and for all, the old bias against gas fires, and to win the full approval of the Medical Profession for the correctly designed gas fire as a


A Diagram with Dates
showing the evolution of the 'High Beam' Gas Fire
First Columnar 'Therma' Radiant 1908
'Therma X' Radiant 1910
'Therma XX' Radiant 1920
'Beam' Radiant 1928
Tubular 'Beam' Fire with plaques 1931
Upper or Scrubber plaques
'Beam' Plaque Radiants
The High 'Beam' Gas Fire 1933

thoroughly hygienic appliance. Silent burners and injectors, simple methods of adjustment for pressure and quality of gas, and the duplex burner also added their quota to the goodwill that has steadily been built up for domestic gas heating. In these days it is of interest to note that the first series of gas fires with standardized and interchangeable working parts was also introduced by a Radiation manufacturer.

Cooking for the Million.

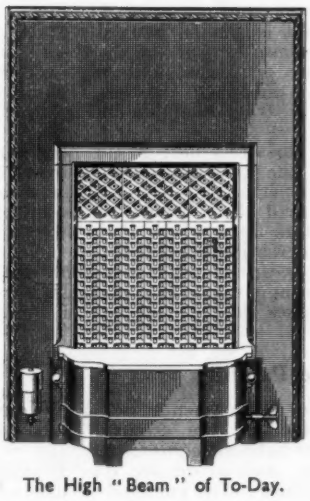
In the sphere of gas cooking a steady stream of improvements was maintained by these pioneers, gradually transforming the early "iron box and burners" into the up-to-date porcelain-enamelled gas cooker. So far back as 1894 removable burners for the hotplate and oven had been introduced by a Radiation manufacturer, and grill frets which could be raised or lowered—enabling the grill burner to be used for grilling or as a boiling burner—had been incorporated at a still earlier date.

Another landmark in gas cooking was the introduction of the first series of "slot" cookers by one of the Radiation Firms, who urged the advantages of their adoption by the gas undertakings. This Company was also responsible for the first sample of the now indispensable platerack and wallplate.

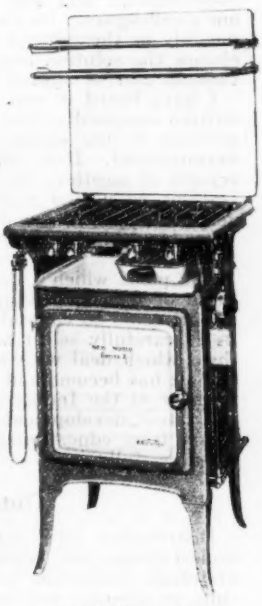
It will probably nowhere be regarded as an exaggeration to claim that no appliance has been a better advertisement of the advantages of gas than the "Regulo"-controlled "New World" cooker, and it is hard to conceive that any domestic apparatus can be better known to the public.

It is not a misstatement to say that this appliance—first introduced early in 1923—has transformed household cooking and led to a new conception of thermal efficiency and utility. The "New World" not only introduced the idea of automatic cooking in the oven, but also the appliance itself has been developed to conform to definite and stringent combustion standards which Radiation Limited itself laid down. It is gratifying to note that the attainment of such standards is now accepted as a *sine qua non* in the case of modern gas apparatus.

From the point of view of thermal efficiency also new standards were attained with the "New World," and it is not without interest that it is this appliance which is called



The High "Beam" of To-Day.



The Modern "New World."

upon when it is necessary to uphold the superiority of gas for cooking in competition with other heating agents.

Hot Water Service.

The sales possibilities latent in the use of gas for providing hot water have always been carefully studied by

all the Radiation Manufacturers in their separate ways, which has in no small measure contributed to the enviable position in which this branch of the Industry finds itself to-day. Automatic control of the gas supply by the all-metal thermostat was first envisaged and incorporated nearly forty years ago by them, and, as a matter of interest, the principle then used formed the basis of the design of the "Regulo," which was the forerunner of all the domestic gas oven thermostats used in the country to-day.

Other milestones in progress were the combination of the heater with the storage tank; the now well-known economy valve return connection; the production of the "circulating unit" in compact conjunction with a storage container; the overcoming of "hard water" difficulties; and the elimination of liquid condensate while preserving efficiency.

Distribution and Service Operations

by D. YULE

A Paper read before the Auxiliary Section of the North of England Gas Managers' Association at their Meeting at Newcastle-upon-Tyne on Nov. 30.

The title above will indicate that my Paper deals with a subject of some breadth, and while Distribution and Service is a matter brimful with interest, the Paper in its preparation has involved certain difficulties. In the first place by reason of there being little new or fresh for me to speak upon and secondly, in regard to detail selection. I would expect that to some it will appear I emphasize some matters of small consequence and deal only cursorily with other items of greater significance.

Some years ago while addressing the Scottish Junior Gas Association (Eastern District), a sister organization whose constitution, aims, and objects are, I believe, similar to those of this Auxiliary Section, I said among other items: "Any address, whether long or short, would be instructive if it made an appeal to a generally felt want. . . . It may convey new facts or new thoughts, or may not convey either, but might be arranged in a manner to suggest new ideas."

While what follows, therefore, may not convey any new facts some item or items will possibly offer to some minds other lines of thought. If it should do so and also result in subsequent discussion, I will be happy to know that interest has been aroused. I believe it is a general experience, more especially among the younger men, to think that one's own particular point of view or ideas are commonplace and not worth expressing or iterating to one's colleagues. On the contrary, such information might possibly be the solution to someone else's problem; or perchance the solution may be incomplete yet a new line of thought and/or approach to a matter might result.

I have heard it said over and over again, it has been written repeatedly, that interchange of knowledge and experience is the quickest and cheapest way for mutual improvement. How apt that is can be gauged from the reports of meetings, discussions, &c., of the many organizations connected with our own vast Industry, whose deliberations are regularly published in the Technical Press furnishing, in the main, truly readable and informative matter.

The point which I desire to stress here is the need for those of us engaged upon the Distribution and Service Departments to counsel the personnel serving along with us to carefully select and read those reports or parts of them which deal with matters upon which their interests lie. It has become and is increasingly necessary for every member of the Industry to keep himself conversant with the latest developments in apparatus and in technique. Apart from educational classes this is a method of doing so successfully.

Outside Painting.

Distribution and Service Departments of many gas undertakings are responsible for the essential care of materials comprising public lighting equipment. The results of erosion, weathering, and so on are quickly evident, more particularly to those of us engaged at a coast town. Additionally, in the industrial area of Tyneside the moisture in the atmosphere will be less or more charged with sulphur, carbon dioxide, calcium, and magnesium salts which are normally present in the soot and smoke regardlessly emitted from the myriad of chimneys large and small. It is, therefore, wise in such circumstances to carry out a good deal of painting as a means of preserving the exposed metal surfaces.

Painting to be effective and yet economical involves the use of paints of good quality and these must be applied with intelligent attention. Paints should be applied to the surfaces only when the latter are in proper condition to receive them. It is as unworthy and uneconomical not to paint at all as to endeavour to preserve with poor quality paint, or to do the work at an unseasonable time.

I will not deal now with what may constitute good quality paints and their relative bases, vehicles, solvents, driers, &c., since the proportions of the ingredients used in mixing them should be determined by, and would vary with, the circumstances. Neither will I consider here chemical tests, but I will indicate some quite simple physical tests.

These can conveniently be classified into the following for purposes of comparison of one paint with another which may have been quoted for, and of which working samples would have been asked for and submitted:

1. Covering property.
2. Time taken in drying.
3. Body of paint.
4. Colour stability and weathering durability.

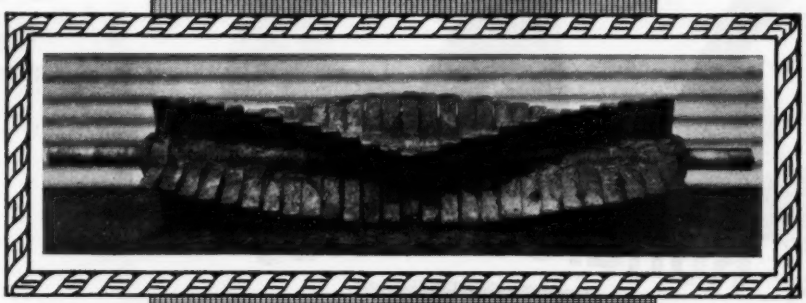
1. This is done by painting a surface with a weighed or measured quantity of the paint, applied as would ordinarily be done upon the job in prospect. One may then ascertain, say, the superficial area or the number of articles—*e.g.*, lamp columns, per gallon of material.
2. Note carefully the time taken for the surface to become (*a*) tacky, and (*b*) perfectly dry, and subsequently examine for smoothness, lustre, &c.
3. It is insufficient to note only the covering capacity (1) because one paint might be in great degree superior to another in this particular regard but may provide a grossly inferior body the life of which would be short comparatively.
4. Carefully examine at predetermined intervals for colour or lustre perish and note the weathering qualities. Look for cracking, blistering, peeling, pitting, or flaking.

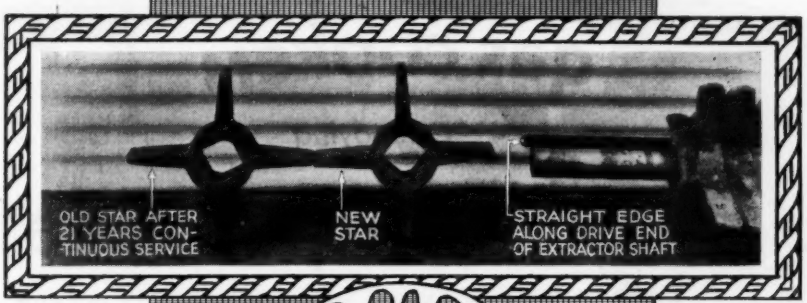
   In this particular type of work, as for all metal work painting carried out *in situ*, an air-drying material is used and should for preference be a glossy paint. A hard glossy surface is more easily kept clean than a flat surface which holds the dust; the former can be readily wiped or washed down at any time.

Personnel.

Just as it is necessary to select the appropriately correct protective materials and to eliminate waste thereof, so is it necessary to make fitting choice of personnel and to spare waste in labour. The lamplighters, therefore, who are generally employed in painting the street gas lighting equipment during the summer season slackness must be selected carefully and with due regard to their capabilities. At the outset our men are advised that they have been given definite responsibility for a particular job and for doing the work accurately. This results in speedier work. It is encouraging to find as a result of instilling a sense of

FOR LONG SERVICE





21 YEARS SERVICE

The above photographs show a W-D Coke Extractor recently removed from an installation of W-D Continuous Vertical Retorts which is being reconstructed at Greenock. The plant has been in service since 1914 and the Extractors are in so excellent a condition that they are being incorporated in the new plant. Each is estimated to have extracted 12,000 tons of coke

W-D DESIGN
W-D MATERIALS
W-D WORKMANSHIP

THE SUREST GUARANTEES OF LONG SERVICE

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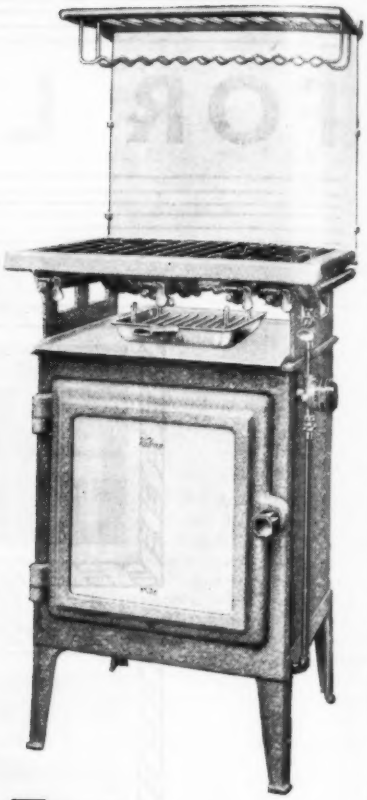

Unique Features

★ All porcelain enamelled finish

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(No loose gates required)

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(Patented)

★ Single back oven burner
(Patented Construction)

or side oven burners if desired

★ Automatic Oven Heat Control

★ Four oven sizes • Six hotplate sizes

VULCAN

THE VULCAN STOVE COMPANY LIMITED
EXETER, ENGLAND

Makers of the Vulcan Patent Glass Door Cooker

responsibility early and strongly that speedy proficiency in the case of the correct selection does definitely result.

Public Street Lighting.

The value, from the point of view of silent publicity of the gas public lighting lamps is indeed difficult to assess but obviously the better the condition in which they are maintained the greater, by far, their value. There are other important factors—*e.g.*, the intensity of illumination on the road surface, &c., but as this is a question generally wrapped up in the finance of the lighting authority it is not always possible for the gas supply undertaking to establish the ideal lighting conditions. Together, therefore, with insistent recommendations to the appropriate administrative bodies or officials for the improvement and modernization of equipment it behoves the gas suppliers to have the lamps, which are in their care, kept in the best condition and giving the best results possible so as to convey indirectly to the minds of the populace what gas will do.

Within the Borough of South Shields the electricity supply undertaking is municipally controlled; as a result the "whip cracks" to the disadvantage of the Gas Company and the gas equipment, quantitatively, is not up to the standard it could be. Notwithstanding, the Gas Company has never slackened in its efforts to give the utmost service up to and, may I say, beyond the limits governed by the revenue. This policy caused my Chief, Mr. Dugald Currie, to devise, following exhaustive experiments and tests, a directional reflector of a very high standard. The reflector has been authoritatively tested photometrically and the results obtained have been highly satisfactory, especially at angles 10° to 30° below the horizontal and at 10° and 20° bias from the line of kerb. With a single No. 2 long-fabric mantle the heat input is at the rate of 1,662 B.Th.U. per hour.

Paint Spraying Plant.

So far as is practicable and always with the needs of our customers in view we follow closely and resolutely improvements in machinery and in processes.

In the schemes of simple-hire apparatus and slot cookers, for example, efforts were some time ago directed towards making available better finished appliances for which, by reason of the craze for colour, a demand had been created. As a result of the policy there was installed at the Distribution and Service Department workshops a paint-spraying plant for reconditioning all types of apparatus as approved for use on the district.

This plant comprises an air compressor, twin cylinder type (supplied by Messrs. Aerograph, Ltd.) of the stationary air-cooled pattern. Belt-driven from the stove shop shafting it runs at approximately 600 r.p.m. to provide air pressure at 40 lb. per sq.in. and operates in conjunction with a steel cylindrical air receiver measuring 18 in. diameter by 60 in. high. Air filters and transformers are employed so that clean air only (*i.e.*, free from water, oil, or dust) reaches the air guns and so ensures a clean, unblemished surface upon the articles being treated.

Four air guns (Aerograph) were obtained each with an adjustable nozzle suitable for any work undertaken; wide-band, pencil lining, mottle spraying, &c., being readily available at choice. The edges in all those types of process are finely atomized so that under any condition an even coating is furnished at the laps. Mounted directly upon the guns are either 1 pint or ½ pint paint containers. Two containers for each gun in use permits continuity of work, since by changing over there need be no time lost cleaning out the containers and refilling with another colour.

Two rectangular spraying booths (at one time stoving ovens from which the doors were removed) had an aperture cut in the back of each and were connected by duct to an exhaust fan. The latter serves to discharge to atmosphere the superfluous vapours while actual spraying is in progress. There are, of course, the usual accessories such as reducing and safety valves and pressure gauges. A small reducing tank with valves is embodied and was primarily intended to facilitate mottle spraying. This is useful really for a variety of purposes and has so been employed in, for example, blow lamp and small furnace work of an intermittent character as found serviceable in stove shop work.

Reconditioning Cookers.

Cookers in the old time customary black lacquer finish which for certain reasons may have been returned from the district are first inspected for broken and missing parts and if found in good order are stripped of the stop-cock rail, burners, burner supports, and other loose parts. The cooker carcass is then coated with a degreasing solution and put into a steaming chamber formed by a rectangular galvanized sheet-iron box which, inverted, fits over the cooker placed upon a cast-iron base. The centre of the base is provided with a simple steam ejector. Steam at about 20 lb. pressure is applied, and the cooker left for 20 or 30 minutes in this chamber is freed of grease, the degreasing solution, and carbon.

This simple degreasing operation is quite successful for the major number of returned cookers, but in the case of, say, an unlined prepayment cooker which may be in a rather inordinately dirty state it is immersed in a caustic bath and left for a period. The latter would vary with the character of the dirt. Any scale or carbon still adhering is removed by wire brush and when thoroughly dry the carcass is passed to the paint shop mounted upon a flat four-wheeled truck. The truck, by reason of the wheels being individually mounted and free to rotate on a vertical axis and to revolve separately, also serves as a turntable.

Following careful tests we adopted a special paint finish for the simple-hire and prepayment cookers; synthetic stoving enamel of a beige colour is used as a ground coat and after air-drying for two to three hours is then partially covered with a shading finish, also of synthetic enamel, in a teapot brown.

The cooker carcass, still on the truck after being spray painted, is then transferred to the stoving oven and treated for a 30-minute period. The atmosphere in the oven is maintained at a temperature of 250° F. Thermostatic controls of the Bi-metal type are fitted and caution being exercised in the timing period a very definite repetition of similar conditions for all cookers is effected.

Loose parts—*i.e.*, burners, deflectors, oven grids, &c.—are heated to rid them of dirt and grease and plunged while hot into a solution of a compound of iron with sodium silicate and water. This gives them an agreeable silvery grey colour of a quite satisfactory lasting quality. These and the rail with brass stopcocks renewed where necessary or thoroughly overhauled and cleaned are then refitted. Following reassembly the cooker is tested, inspected, and passed for issue on to the district. The colours specifically mentioned provide a quite attractive and pleasing finish and have been found to stand up to discoloration without being very noticeable. The light beige ground may (for example around a door which is not a machined fit) turn darker to almost the same depth as the shading brown while the brown may darken too, but can do so only slightly.

It is our experience to have any of these specially finished carcasses which may have been again returned through some unforeseen circumstances simply freed of grease in the steaming process referred to, washed down, tested, inspected, and put on to the district again without need of repainting, only loose parts passing through the aforementioned process in entirety.

Peeling does not now cause any anxiety. I might add in this connection that we find it necessary in the case of cookers to carefully go over the surfaces of the metal with a blow lamp immediately before spray painting. The intense heat of the flame serves to remove moisture from the pores and crevices of the metal. Prior to making such use of a blow lamp it was found that this moisture, remaining within the metal, so soon as the cooker was subjected to heat, say, for example, when put into commission, caused blisters to appear upon the finished surface and invariably led to peeling.

We do not regard this special paint finish as permanent for, like vitreous enamel finish, it stains and chips; but from observation it is believed that the selected colours and the quality of the paint used will be found by our consumers highly satisfactory with ordinary care in usage, and will, presumably for many years, serve to enhance the appearance of the cooking appliance to say nothing of the change in the aspect of the kitchen.

I venture to suggest that since we have not imitated the mottled enamel finish and clearly furnish only a hard, stoved paint, the consumers are not induced to use abrasive cleaning powders for removing grease and so therefore our finish does not suffer the consequence of such measures as do the vitreous enamelled models. Since the plant was put into commission on June 15, 1933, we supplied a total of 3,500 cookers up to Oct. 31 last. This figure includes, however, a small number of black lacquered cookers for which there still remains a demand, though infinitesimal, principally from small tradesmen and the like.

The average weekly output of cookers alone is, to-day, approximately 40; or 8 each day of 8½ hours. Saturday of each week, while the demand is normal, is reserved for "cleaning up" in the paint shop. This involves scraping the inner walls of the booths and regreasing, scraping the duct to and beyond the fan, thoroughly cleaning out all guns, and generally tidying up.

Costs to date for cleaning and renovating cookers stand at an average of 15s. 3d. each, which includes the renewal

of burners, rail and oven cocks, and inner enamels where necessary, baking plates, top bars, grid shelves, supports, and deflectors, as well as the gas used in stoving and testing. Each cooker requires an average of ½ pint of the beige and ⅛ pint of the shading materials. Two operatives have been trained in our own workshops for this specialist job of spray painting; both are required only during the peak output which has reached a figure of 95 during one week, comprising 69 prepayment and 26 simple-hire cookers. Either of these men are now able to furnish on demand pleasing, simple, or elaborate coloured finishes upon such as gas fires, fire surrounds, and hearths to suit the taste of even the most fastidious of our consumers. For gas fires, &c., a wider range of finishes is available; self colours, shaded colours, mottles, marbles, &c., being done with expedition and with ease.

Reconditioning Cookers in Vitreous Enamel.

By thus providing an agreeably coloured and easily cleaned cooker it was considered that a fair measure of success had resulted in increasing the demand for gas cookers, and also in meeting the intensive competition sponsored by the electrical industry. The latter incidentally supply consumers with all-enamelled cookers on simple hire terms at amazingly low rentals, and by reason of exaggerated claims for saving labour and disingenuous references to fumes, &c., they do, from time to time, put these cookers on the districts (no doubt to the eventual disillusionment of the housewives who must find them merely a rather fascinating way of complicating life). Also as we appeared to have a deal of returned cookers in stock it was further decided to supply reconditioned cookers in a vitreous enamelled finish. These are sold for cash or on a hire-purchase basis, the period of hire-purchase being confined to 4 years, involving 16 quarterly payments.

This is a decidedly more costly process since it necessitates complete dissembly of cookers, transport of parts to and from the enamellers, and reassembly with new linings and rail cocks, together with a greater percentage of new burners, top bars, and such accessories; nevertheless, we are able to show an appreciable saving compared to the purchase of a new vitreous enamelled cooker, and consequently the consumer may procure a modern appliance cheaply.

The prices vary with the size of cookers so treated, but on an average the costs to the Company *ex* our own stores are ***£2 2s. 4d.*** That figure includes carriage of parts, dissembling, reassembling, and renewal of parts.

Record Keeping.

"Experience does take dreadfully high school wages, but he teaches like no other."

On the distribution and service side of the Gas Industry we find it increasingly necessary, or leastwise desirable, to note and to keep for future reference, careful and concise data relative to all operations and transactions however small or immaterial these, as records, may at face value appear.

Alike in every industry or business, whatever the magnitude, if consistent and intelligent use can be made of experiences and lessons of the past a step has been made in the right direction towards successful trading. To deal with only one item concerning the Distribution section as an example I will cite the preparation of estimates for prospective operations. It is appreciated at once that guesswork or rule of thumb generalities are gone for all time where up-to-the-minute practice is applied. Confidence is engendered and much more accurate results are obtained by the application of carefully recorded data of actual work done, varied possibly and as would be suggested by the new or prevailing circumstances.

There have been, and probably ever will be, discrepancies between estimates and actual results, but we can be sure that there will be evidence of a much greater measure of balance resulting from skilfully framed estimates prepared on the lines suggested. The data being the basis must be logged with meticulous care, else false deductions are liable to be drawn, and with a great deal of consistency since no two jobs are exactly similar. Any list or preconceived ideas as to the purpose of the figures must be eliminated. "The facts may not be bent to suit the theory," the danger being that a number may be rejected because it appears contrary to promise and varies from the average. The following are taken from actual experiences:

Mainlaying Costs.—3 In. Spun Pipes, 12 Ft. Lengths, with S. & F. Joints.

Subsoil.	Length of Job in Yards.	Cost of Pipes per Yard.	Cost of Jointing Material per Yard, including Coke.	Cost of Labour per Yard.	Total Cost per Yard.	Remarks.
		s. d.	d.	s. d.	s. d.	
Clay . . .	24	2 7½	2·33	1 8	4 5·83	Mainlayer and 3 labourers
Clay . . .	48	2 7½	2·50	1 6·77	4 4·77	,, 4 ,,
Clay . . .	28	2 7½	3·36	2 1·57	5 0·43	,, 4 ,,
Clay . . .	68	2 7½	3·09	1 11·75	4 10·34	,, 4 ,,
Clay . . .	116	2 7½	3·16	1 6·67	4 5·33	,, 3 ,,
Clay . . .	68	2 7½	3·23	1 2·0	4 0·73	,, 3 ,,

Reinstatement of road surfaces, where applicable, not included.

The average labour only costs are 1s. 7d. per yard.
,, ,, total costs laid are 4s. 6d. ,,

Mainlaying Costs.—4 In. Spun Pipes, 12 Ft. Lengths, with S. & F. Joints.

Subsoil.	Length of Job in Yards.	Cost of Pipes per Yard.	Cost of Jointing Material per Yard, including Coke.	Cost of Labour per Yard.	Total Cost per Yard.	Remarks.
		s. d.	d.	s. d.	s. d	
Clay . . .	28	3 3	3·11	1 9·2	5 3·31	Mainlayer and 4 labourers
Clay . . .	76	3 3	2·66	1 10·0	5 3·66	,, 3 ,,
Clay . . .	32	3 3	2·91	1 11·7	5 5·61	,, 3 ,,
Clay . . .	48	3 3	3·43	1 7·3	5 1·73	,, 3 ,,
Clay . . .	104	3 3	2·74	1 2·8	4 8·54	,, 6 ,,
Clay . . .	44	3 3	2·95	2 2·1	5 8·05	,, 4 ,,

Reinstatement of road surfaces, where applicable, not included.

The average labour only costs are 1s. 8d. per yard.
,, total costs laid are 5s. 2d. ,,

NEW PARKINSON GAS FIRES WITH AUTOMATIC IGNITION

★ **UNIQUE HIGH-LEVEL CONTROL — no stooping down to light the fire.** The hand level tap, which operates the automatic ignition device, is situated at the top right-hand side of the fire.

★ **GREATLY INCREASED RADIANT EFFICIENCY**

This has been achieved by considerable modification to the fire-brick, both in design and material, to reduce heat losses and by the introduction of a new form of radiant.

★ **NEW SUPER-RAY RADIANT**

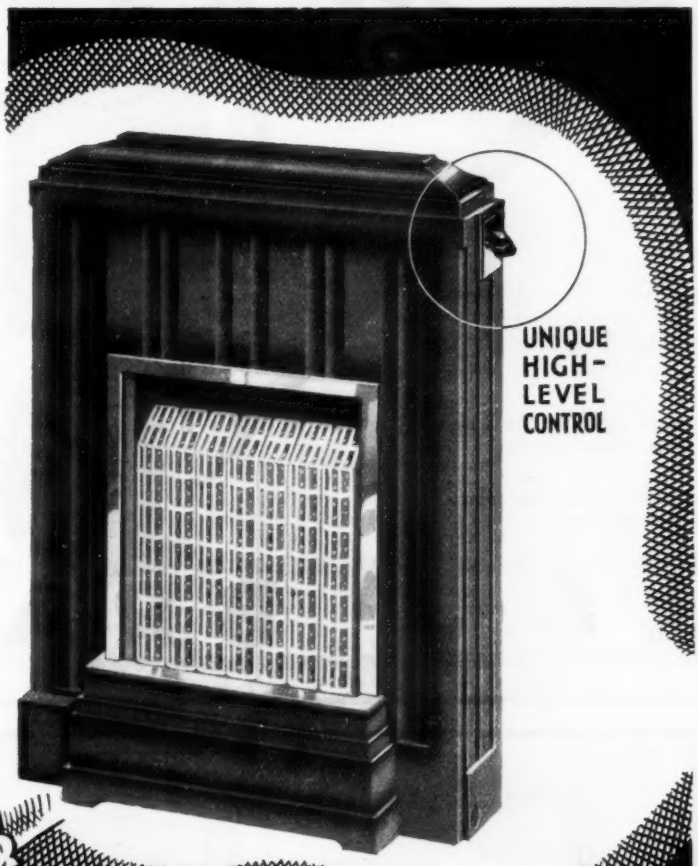
This greatly improved Parkinson radiant is so constructed that the maximum amount of heat is extracted from the flame and directed forward into the room.

★ **ECONOMICAL**

Economy in gas consumption is an outstanding feature.

★ **STRIKINGLY ATTRACTIVE IN APPEARANCE**

The "Super-Ray" series of gas fires is available in a variety of strikingly modern designs—The "Dorchester," "Cumberland," "Welbeck," and "Ambassador."



TURN THE TAP—THE FIRE LIGHTS ITSELF

The
SUPER-RAY
SERIES OF GAS FIRES

by
PARKINSON

With the introduction of the Parkinson automatic ignition device, it is possible to offer gas consumers a modern gas fire which can be lit by the turn of a tap—and without stooping down. This is achieved by the incorporation of a high-level control tap situated at the top right-hand corner of the fire. As the tap is turned on, the current from a small battery heats a wire spiral to a glowing heat. The stream of gas from the pilot impinges upon the red-hot spiral and is ignited. From the variety of designs available, a "Super-Ray" gas fire may be selected which will enhance the appearance of any room, and add an air of distinction to the most up-to-date decorative setting. If desired, an automatic floor-level control tap is available, or the fires can be supplied with ordinary injectors.

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DESIGNED TO GIVE A VERY HIGH DEGREE OF RADIANT EFFICIENCY

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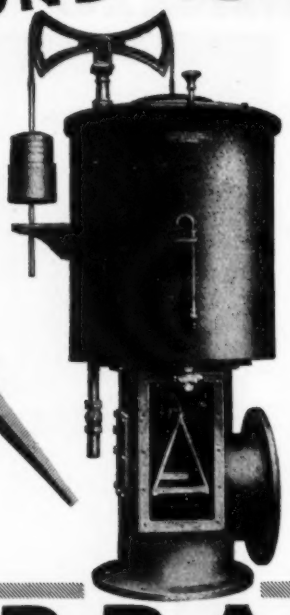

Braddock's Patent Retort House Governors are unsurpassed for general excellence.

Especially desirable for use with vertical retorts

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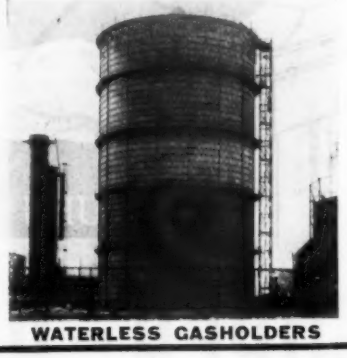

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PURIFIERS

Mainlaying Costs.—6 In. Spun Pipes, 12 Ft. Lengths, with S. & F. Joints.

Subsoil.	Length of Job in Yards.	Cost of Pipes per Yard.	Cost of Jointing Material per Yard, including Coke.	Cost of Labour per Yard.	Total Cost per Yard.	Remarks.
		s. d.	d.	s. d.	s. d.	
Ballast . .	48	5 3	6·15	2 4·54	8 1·65	Mainlayer, 4 labourers, and watchman
Clay . . .	84	5 3	4·00	1 8·50	7 3·50	,, 4 ,,
Clay . . .	48	5 3	6·50	3 0·1	8 9·60	,, 4 ,,
Clay . . .	84	5 3	4 46	3 0·52	8 7·96	,, 4 ,,

Reinstatement of road surfaces, where applicable, not included.

The average labour only costs are 2s. 6d. per yard
,, ,, total costs laid are 8s. 2d ,,

As a matter of interest we recently laid 665 yds. of 12-in. diameter spun pipe in 15-ft. lengths, with a gang of twelve men, and averaged 9 pipes per day. The labour costs on this job were 3s. 11d. per yd. and the total cost per yd. was 18s. 11½d.

For work of laying service supply pipes I give below an extract which is based upon experience with 1-in. steam quality wrought-iron pipe coated and wrapped with hessian cloth all as supplied by the pipe manufacturers:

Service-layer and labourer excavating and filling in ground—

	Per Hour.
Where the service supply pipe exceeds 40 ft. in length	4·53 ft.
,, ,, ,, is between 30 and 40 ft. ,,	3·40 ft.
,, ,, ,, ,, 20 and 30 ft. ,,	3·10 ft.

Discussion.

The CHAIRMAN congratulated Mr. Yule on his extremely interesting Paper and said he quite agreed with the author that young men were apt to consider their ideas not worth mentioning. It was better for them "to get up and speak out" if they thought they had an interesting point even if it were not original.

Mr. L. M. WELDON (West Hartlepool) said they welcomed a Paper on distribution. What Mr. Yule described as the quantitative aspect of public street lighting was a common problem where the Corporation did the lighting and the gas was supplied by a company. The reflector which had been devised at South Shields to improve the service despite limitations of revenue, was very interesting, and it behoved all engineers to get all possible use from directional light reflectors. As to reconditioning cookers, they had tried spraying, but found that customers did not respond readily to the lure of colour. Eventually they tried vitreous enamel, and in twelve months such was the response that they dealt with 1,000 notwithstanding that 1s. per quarter was added to the rental. The cost in vitreous enamel seemed to work out about 10s. more than at South Shields.

Mr. J. W. PALLISTER (Middlesbrough) referred to Mr. Yule's remarks on lamp painting, and said at Middlesbrough the cost per lamp for 2,793 painted had worked out at 2·94d. for material and 9·41d. for labour, a total of 12·35d. The cooker renovating costs at Middlesbrough were similar to Mr. Yule's at 16s. 6d., the average weekly output being 80 cookers with ten men. Had Mr. Yule the photometrical tests of the directional reflector as the results would be very interesting. It was interesting to note the use of the blow lamp in renovation work for removing all traces of moisture. Since using this lamp they had had no further trouble due to moisture, and it had been surprising how it brought moisture out of what had appeared to be a perfectly dry surface.

Mr. W. E. OULDS (Tynemouth) said he considered good public lighting was one of the best advertisements the Gas Industry could have. He was surprised to learn that South Shields was using 3-in. pipes, but perhaps they were laid for short streets or *cul-de-sacs*. They used 4 in. at Tynemouth. In main laying, the number of labourers employed seemed small. There was no item in the costs for haulage. Was that included elsewhere?

Mr. J. B. HENDERSON (Newcastle) said the paint for lamp columns should be of the best, as the labour costs were the same for good or bad paint. Did they find it necessary, however, to paint the lamp columns every year at South Shields? They were certainly at a disadvantage in having to compete with the Borough electricity undertaking. The costs of mainlaying and service seemed to be rather high, but perhaps the mains were laid at a greater depth.

Mr. C. F. BARROW (Sunderland) said he agreed with Mr. Yule in the use of 3-in. pipes. They used 3-in. pipes at Sunderland, but they put only a ¾-in. hole in them. Quite enough money had been wasted in laying special mains to new estates where the houses were scattered and the 3-in. main was quite sufficient. They started with 6-in., then reduced to 4-in., and so to 3-in. Whether to put in enamel cookers for simple hire was a vexed question, and some people had become alarmed because the electricity people were doing it. They had tried spraying paint, but found it unsatisfactory, and the paint would not stand hard usage. Eventually they found a firm in Scotland to which they sent a batch to be enamelled, and since May had sold 3,000 of these reconditioned cookers and were still taking orders for about 60 a week, mostly from middle and working class homes. He felt they had stifled the electricity campaign for electric cookers. Mr. Yule's main-laying figures were lower than theirs.

Efficiency of Reconditioned Cookers.

Mr. C. S. REID (Washington) said the idea of getting rid of old cookers which might have been in service for years and putting them out again in brighter colours was all right from one point-of-view, but there was the question of efficiency to be considered. Recent figures of comparative tests showed that the old type cooker required 41 cu.ft. of gas to cook a meal, while for the same meal a modern cooker required only 17½ cu.ft. Was the reconditioned cooker not going to make cooking by gas more expensive than it ought to be? Would it not be better to push the sale of modern cookers using half the quantity of gas? People would not pay twice as much for gas if they knew they could cook more cheaply with the modern cooker. It was questionable whether they were doing right in putting out old cookers instead of the modern and more efficient models.

Mr. BARROW said that perhaps Mr. Reid was comparing the old type of unpacked cooker with a modern one. They had made tests of bread baking in new and old type cookers and found that the actual difference in the amount of gas used was 1 cu.ft. The old cookers were of the packed type and still efficient after twenty years' service on the district.

Mr. P. F. FALL (Sunderland) asked Mr. Yule if he had ever considered concrete lamp standards, doing away with painting altogether. Were the painting regulations actually carried out to the letter? If a man stopped painting every time there was a drop of rain, it was going to be a long job.

Mr. J. R. CLEATOR (South Bank) asked how long mantles lasted at South Shields. His Undertaking got 1,200 lighting hours per mantle. It was better for the gas company to look after the lamps, because it was his experience that the Corporation did not pay so much attention to them as would a gas undertaking.

The Author's Reply.

Mr. YULE, replying to the discussion, said that the Company had an agreement with the South Shields Corporation to paint the lamps annually. He had no figures as to painting costs, but each lamp required about half-a-pint of paint, and one man did 29 lamps per day of 8½ hours. The lamp lighters were chosen with care and the best men were also employed for painting. The figures for the life of mantles varied considerably. Some of their lamps were single burners, about 2,500 out of a total of 3,075 lamps. Their average for last year was 4·2 mantles for 3,940 lighting hours. They had about 30,000 pre-payment customers and 50% of them had pre-payment cookers. When they had gone on to reconditioned cookers they had had many old cookers returned, and he thought the same would happen if, as Mr. Reid suggested, better cookers still were provided. They might find they would have a lot of good, reconditioned cookers on their hands. Their cookers, too, were sent to Scotland for reconditioning. Breakages were very small and carriage costs low—about 25s. per ton. They used 3-in. pipes only for *cul-de-sacs* and short streets. In long streets 4-in. pipes were used on one side and 3-in. on the other. It might be wise for them to consider putting in 4-in. pipes. Mains were laid 21-in. deep in the carriageway and a minimum of 18-in. in the footpath. All haulage costs were included in the main-laying cost per yard. Handling costs were included under labour.

Mr. BARROW proposed, and Mr. J. F. LORD (Darlington) seconded, a vote of thanks to Mr. Yule, which was carried with enthusiasm, as also was a vote of thanks to the Chairman, Committee and Hon. Secretary, proposed by Mr. A. O. OLD (Hartlepool) and seconded by Mr. G. E. ANDERSON (Wallsend).

YORKSHIRE JUNIOR GAS ASSOCIATION

THE PRESIDENT.

Mr. J. W. Carlton was educated at the Christ Church School and the Technical College, West Hartlepool. He received his early training in the Distribution Department of the Hartlepool Gas and Water Company, relinquishing his position in 1913 to take up the duties of Distribution Superintendent to the Cleethorpes Gas Company under the late Mr. E. Brockway. In 1922 he was appointed Distribution Superintendent to the Shipley Urban District Council Gas Department under Mr. H. Burton, with whom he still continues to serve. Mr. Carlton has for several years been an active member of the West Riding of Yorkshire Gas Salesmen's Circle, and in 1930-31 was Chairman of this organization. He is a member of the Council of this Circle. He is keenly interested in the activities of the National Association of Local Government Officers, and during the past few years has been a member of the Executive of the Shipley Branch.

Presidential Address

OF

J. W. CARLTON

(Distribution Superintendent to the Shipley Urban District Council Gas Department)

Presented at a Meeting of the Association held at Shipley on Saturday, Nov. 23.

When Mr. Burton gave his Address to you at Leeds on Oct. 26 he gave you some figures and details showing the financial position and the condition of the carbonizing plant at Shipley when he was appointed. He also told you that losses had been recorded on the revenue account during the previous three years of £22,000 and that the price of gas had been increased to 6s. 8d. per 1,000 cu.ft.

Although new carbonizing plant was needed, no case could be made out for further borrowings, and there was no alternative, therefore, but to try to regain the confidence of the consumer and increase the output by giving special attention to service. It was by giving that attention that, in three years, deficiencies were turned to slight profits and the gas sold had increased by 50%, and as even to-day we are practically maintaining our output in spite of keen electrical competition, together with gas at 5s. per 1,000 cu.ft., I propose to deal briefly with our methods.

One of the first things to be dealt with was the non-productive methods in the Distribution Department, and in order to make them more productive re-organizing and simplification of the system then in use was carried out as follows:

All complaints and work to be done were entered in a complaints book by the clerk, and later extracted by the fitter responsible (for the fixing of meters and escapes in the one case; for fixing of cookers, &c., in the second place; and for services, &c., in the third place), entered in a pocket book, and the materials used booked against the order by him. This fitters' book was periodically handed in to the chief clerk for chargeable work to be extracted into a fittings charge book, from which all debits were made against the consumer by posting into the consumers' ledger.

Investigations into the methods employed in giving instructions to and recording work done by the outdoor fitting staff showed that a considerable amount of non-productive time in clerical work performed by fitters and other skilled workmen was being wasted. After giving considerable thought to this matter, a card system was adopted as an experiment for the fixing and changing of meters.

Under this system the name and address of consumer, together with the date and nature of complaint or work to be done, were entered direct into a card job book, each page containing 4 cards (6 in. by 4 in.)—100 pages per book or 400 cards in all. Each card is marked "M," numbered consecutively, and perforated for easy extraction. The printing of the original leaf is card duplicated, and therefore the original entry is retained in book form for official reference, &c., the carbon duplicate being given to the fitter after his name and date of handing to him have been entered thereon. The back of the duplicate card is printed for the use of storekeeper and, through a "stores issued" book, duplicates all stores and materials issued in connection with the particular job entered. Columns are provided for:

(*a*) Description of stores issued.
(*b*) Allocation.
(*c*) Issued.
(*d*) Returned.
(*e*) Used.

Unless a card is produced for the storekeeper no materials are issued to the fitter.

This system not only simplifies the old method but also tightens the storekeeping system on account of the fact that no stores are issued without a record being retained by the storekeeper and debited against the particular job for which they were issued. Upon referring to the card you will see that it contains the whole of the information required by the various persons concerned with a minimum of clerical work, particularly by the workmen. This system as applied to meters was found to be so successful that it was finally extended to mains and services, fixing and repairing of appliances, and all general complaints.

With a view to assisting in the allocation of labour on the various jobs and the checking of time, &c., fitters are given a daily work sheet, on which they enter the number of the card, name and address of consumer where work is executed, and the time taken to complete the work, or, if the jobs are not completed that day, their part time is shown and so on until the job is finally completed. From this daily time sheet it is transferred to a weekly time sheet by the foreman, and the labour allocated to the various departments.

Irregularities and Defects in Distribution.

Concentrated effort was then given to remedying defects in mains and services. Complaints were tabulated into districts and charted, district pressure registers were fixed, and pressures were taken in street lamps and transferred to charts. By this means we were able to locate the defective points by the drop in pressure shown at demand periods, investigate the reason and remedy same by enlarging the main or service. In doing this we found buried valves, 4 in. mains connected to 6 in. trunk mains by 1 in. wrought iron connections, 1½ in. mains attempting to supply whole streets of houses, and ½ in. and ¾ in. services for anything up to 12 houses. In many cases the consumers had made no complaint whatever for the simple reason that they had never known the advantages of satisfactory service.

In one part of our area of supply we have a residential district of about 1,000 consumers and at that period a pres-

sure chart taken in that district would have shown a variation in pressure of from 50 to 15 tenths and in some parts even less than that during the period of demand. We knew that it was very little use attempting to sell appliances when we were aware that at the time they would most likely be used there was not sufficient pressure to give satisfactory results. In addition to the removal of local faults, a larger trunk main was laid from the Works to a point in the centre of this particular district and a district governor fixed.

We have now a constant pressure at all times of 34-tenths. Needless to say the results have been more than justified by the general satisfaction given to consumers, the goodwill created, and the resulting increased sales of appliances.

In the course of re-organizing the district we have been ever mindful of the great importance in present-day gas distribution of using suitable materials that will withstand vibration or shock. We have used almost exclusively spun pipes as being particularly suitable for present conditions; they can be manufactured with a precision both as regards quality of metal and uniformity of dimensions unobtainable in the ordinary cast-iron pipes, they have a greater density which gives added strength and also a certain amount of flexibility. We have also had a quantity of 3 in. and 4 in. asbestos pressure pipes. They have certain advantages, such as:

(1) A smooth internal bore.
(2) They are non-corroding.
(3) Good insulators.
(4) Light in weight.
(5) Easy to handle and transport.

I am not yet, however, in a position to form an opinion as to their suitability or otherwise.

I have already mentioned vibration, which brings me to the question of joints for gas mains. Until recent years the run lead joints were used for cast iron pipes, but there are now many good reliable flexible joints.

The Stanton-Wilson Joint.

We recently laid about 100 yd. of 9 in. temporary main fitted with Stanton-Wilson joints (as described in the "JOURNAL" for Oct. 23) over a river during the reconstruction of a bridge. The time taken to lay, difficulty in making joints, vibration due to traffic, expansion and contraction due to the main being exposed, and the ease with which they could be dismantled without damage were all points which had to be taken into account; and I might say that this particular joint proved to be very satisfactory indeed for that particular purpose.

We are about to lay a length of 4 in. main fitted with Stanton mechanical lead joint, for which the following advantages are claimed:

(1) It is simple and strong on construction.
(2) Rapidity in jointing.
(3) No special tools required.
(4) Security, as the pre-cast wedge shaped lead ring is firmly and mechanically held.
(5) No corrodible metal.

No high degree of flexibility is claimed for this joint.

While the British public have a reputation for grumbling, it is found in practice that gas consumers have a strong disinclination to lay a complaint. They will continue to use an appliance which is unsatisfactory as long as it will work at all. We therefore endeavour to impress upon consumers that we welcome complaints. They give us an opportunity for personal contact and rendering service, of proving our ability to rectify defects, and of obtaining our consumers' confidence and goodwill. Special observations are kept for repeat complaints, as nothing is more annoying to a consumer than to have to complain repeatedly of default in either service pipe, meter, or appliance. We give prompt and careful attention to all complaints, having in mind the fact that our competitors are always ready to take advantage of any loophole or inattention on our part.

We take a practical interest in local affairs by joining tradesmen's associations, sports clubs, &c., and find that by doing so there are many opportunities of helping and advising consumers on questions relating to the supply and the utilization of gas. We have opportunities of pointing out the advantages of heating clubs or buildings by means of suitable apparatus which, being put forward by one of their own members, is sure to secure favourable consideration.

We give addresses to rotary clubs, men's guilds, and similar institutions. We encourage visits to the Works by these associations, where, after seeing the method of gas manufacture, they are shown the latest types of appliances. We also encourage visits from schools, and realizing that the children of to-day are the householders of to-morrow, look upon this as very valuable propaganda.

Maintenance.

We give free maintenance to all consumers' fittings and appliances and replace any faulty lighting fittings at a special low price. Like many undertakings, we are losing a certain amount of the lighting load to electricity under assisted wiring schemes, but I feel that the Gas Industry has to a certain extent failed to appreciate the importance of this load by neglecting to make better known up-to-date fittings, by neglecting to replace out-of-date equipment by something more modern, and by not supporting the manufacturers sufficiently to warrant their carrying out research and investigations, especially with regard to the dispersion of the products of combustion and the improving or eliminating of gas and air regulators. But I am, however, pleased to see that the question of domestic lighting is receiving the attention of a Committee.

We make a point of impressing upon fitters the importance of ensuring that every appliance fixed and every job done is so satisfactory that it becomes a silent salesman for gas. In this connection I would stress the importance of keeping appointments and promises both before and after sales. To keep a consumer waiting mars your chances of making a sale, while to disappoint a consumer in failing to fix an appliance on a given day may mean cancelling a sale.

We send a circular letter with each fittings account to ascertain if the work done is satisfactory and enclose stamped postcard for reply. We look upon every employee as being a salesman, whether he be the boy who types the letters or the carter who delivers the coke, and they each have their own special opportunities for giving service and doing useful work.

But I would place first in importance meter inspectors as being the direct and connecting link between the gas undertaking and the consumer. They have right of entry to a consumer's house or premises at least four times per year; they come into personal contact with consumers, and therefore have ample opportunities of showing by their politeness, their general bearing, their human interest, and their enthusiasm for gas that we are only too anxious to give service and obtain our consumers' goodwill by giving prompt and willing attention to all complaints and enquiries.

I personally attach the greatest importance to the personal touch, and in selecting meter inspectors would give special attention to their suitability as salesmen. As a result of centralization our meter inspectors read both gas and electricity meters. Gas and electricity accounts are rendered on the same demand note; this system has certain advantages and disadvantages, but time does not permit of my going into the matter as much as I would like.

Advertising.

We believe in the wisdom of backing up the national and district advertising of the B.C.G.A. by consistent advertising in the local press and consider that to be one of the cheapest and best forms of publicity, and while advertising is generally looked upon as a means of benefiting the advertiser, we feel that it is our duty, either by newspaper advertising, the sending of circulars, or other means, to keep our consumers informed as to the latest developments in gas and gas appliances. There are thousands of consumers to-day who have never even heard of the gas switch or gas match.

We look upon showrooms as being essential for the sales development of all gas undertakings. Our showrooms, although only small, have proved very satisfactory in that respect, our sales having increased from a little over £2,000 to over £4,000 in the last five years. A scheme is on hand for the enlarging and modernizing of these premises, which we feel sure will lead to still better results.

According to the latest returns, although the number of gas consumers is increasing the consumption per consumer is decreasing. In some cases this may be accounted for by the use of more modern appliances, but some form of vigorous sales policy is necessary; what form that shall take is best decided by each individual undertaking, according to their own special circumstances.

We keep in touch with and are friendly with builders and house agents and assist them in every way by arranging to lay the necessary gas mains and services to new estates with as little inconvenience to them as possible, and they in return let us have the names and addresses of prospective purchasers so that we can by either personal interview or correspondence arrange for the fixing of a gas meter and suitable appliances.

With the exception of main roads, the whole of the street lighting is done by gas, and we look upon a well kept

system of public lighting as an excellent advertisement. It is much easier to convince a consumer that gas is all right if the street lamps outside are giving good light.

We recently held a combined gas and electricity exhibition, and I feel sure you would like to have the benefit of our experience in running a joint exhibition of this nature. We tried to show gas at its best in ultra-modern surroundings by means of a series of model rooms. We also made the keynote of the exhibition "Gas in the King's Jubilee House" by showing the actual appliances chosen in suitable surroundings, and, while we consider an exhibition of this nature is a greater attraction to the public than one arranged by either department independently, there is an element of danger that the electricity department hunts for new consumers among existing gas consumers, and the more the Gas Department attracts the public to the joint exhibition the more gas consumers are present to be tempted by the electricity salesmen. It is essential in such cases, therefore, that the gas exhibit shall be such that there is no doubt in the mind of the consumer about gas providing the better service. On the other hand, a joint exhibition practically amounts to a veiled challenge and urges one to put forth a greater effort than one would under normal circumstances.

Above all we try to cultivate the team spirit in our employees; we try to be human and sympathetic, and it is not uncommon for an employee to seek the advice of the management upon purely personal matters.

I feel I cannot conclude this Address without a word to the youngest of the Juniors in both the manufacturing and distribution side. Times are very different to what they were when some of us were trained. There are to-day many more diversions, attractions, and temptations to rob them of their leisure time, but I would advise the younger members of our Association to sacrifice some of the pleasures in order to study and make themselves proficient in their particular branch by taking the various theoretical and practical courses now open to them.

Vote of Thanks.

The CHAIRMAN (Mr. E. R. B. French) said although it was not the practice of the Association to have the Presidential Address subjected to questions and discussion, the meeting would readily agree that they had listened to an inspiring and edifying Address on which the President was to be heartily congratulated and which, had it been delivered in the normal course of the Association's activities, would probably have offered plenty of scope for discussion on the many aspects of distribution practice which had been raised. The Address spoke from beginning to end of the sound business acumen which was being applied to the job at Shipley both by Mr. Carlton in his own distribution sphere and by his Chief, Mr. H. Burton, in overcoming the unusual difficulties which had had to be faced in their particular district.

Mr. J. W. HOLROYD (Rotherham), proposing a vote of thanks to the President, said those who had known Mr. Carlton since he joined the Association some twelve years ago had always realized that in him they had a man of sound worth and conscientious earnestness; a man familiar with most phases of the Gas Industry, but particularly with his own subject of distribution. Mr. Carlton had always brought to his work in the Yorkshire Junior Association the same able thoroughness which was evidenced in the Address he had just delivered and was obviously required in the work at Shipley as recorded that afternoon.

Mr. E. BAILEY (Spenborough), seconding the vote of thanks, said he could fully endorse all that had been said by the proposer. He had met Mr. Carlton many times at Junior Gas Association and Gas Salesmen's Circle meetings and he had always found him ready with up-to-date ideas and methods and a practical contributor to any discussion.

Mr. CARLTON, responding, said when Mr. Burton took over the position of Engineer and Manager of the Shipley Undertaking and he took up his duty as Distribution Superintendent they were both told quite frankly that for some time there would be a good deal of spade work to be done. That promise was amply fulfilled; it had been spade work all the time, but they were more than satisfied and more than repaid for any work they had put in by the results achieved.

Mr. B. THORPE (Huddersfield), moving an expression of thanks to the Shipley Urban District Council for the use of the Council Chamber, to the Chairman of the Council for his welcome, to the Chairman and members of the Gas Committee for hospitality, and to the staff of the Shipley Gas Department for their part in making the gathering a success, said the wonderful progress of Shipley Gas Undertaking in the face of exceptional difficulty had been amply demonstrated to the Yorkshire Junior Association by the wonderful Address given them at the opening meeting by Mr. Burton. That and Mr. Carlton's Presidential Address had most definitely "put Shipley on the map" if it had never been there before, and the members of the Association would like all at Shipley to know how much their efforts were recognized and appreciated.

Mr. C. A. NEWHAM (Leeds) seconded the motion.

Councillor TINSLEY, responding, said it had been his intention to leave the meeting after giving the visitors a welcome, but when he saw the copy of Mr. Carlton's Address he realized at once that if he stayed he was likely to hear something very well worth while, and he was extremely glad he had spent the afternoon there. He was glad to be there to add his own quota of congratulation to Mr. Carlton.

Mr. H. BURTON (Engineer and Manager, Shipley) added his own congratulations to Mr. Carlton on a very comprehensive Address. It was no easy thing for anyone in a position like Mr. Carlton, with many things conspiring to interfere, to get down to the preparation of an Address such as they had heard that day.

THE DETOXIFICATION OF TOWN GAS*

There are so many means whereby those so minded may readily escape from the troubles of this life that the elimination of one of them hardly solves the problem which is exercising the attention of Governments in a number of countries in which death by suicide is on the upgrade. Town gas, however, is so convenient and accessible an agency for a "happy despatch" that it is not surprising that much effort is being directed to the question of rendering it non-poisonous by the elimination of the major portion of the carbon monoxide which represents the actively poisonous constituent though the asphyxiating properties will nevertheless still remain when this has been removed.

Dr. Schuster's monograph on the detoxification of town gas presents a detailed account of all the work which has been carried out on the subject over a long period of years. The methods which have been proposed are based on the application of most of those physical processes which are adapted to the separation of gases as well as on chemical processes. The fundamental principles on which they are founded are fully explained and an extended bibliography of the relevant scientific, technical, and patent literature is included.

Originally, the problem was investigated purely subjectively without consideration as to whether the gas, after treatment, still retained satisfactory combustible properties. It is only comparatively recently that such factors as specific gravity and velocity of flame propagation were recognized as being all-important in providing an indication whether a complex mixture of combustible and inert gases is suitable for distribution as a town gas or otherwise. The result has been that considerable ingenuity has lately been devoted to the question of devising a process which shall not only provide a gas containing less than 1% of carbon monoxide but shall also lead to the production of a gas having satisfactory combustible properties. So successful have these efforts been that it has even become possible to devise a procedure for the conversion of blue water gas into a product almost free from carbon monoxide but possessing the high calorific value of the conventional town gas. The procedure necessary for rendering coal gas non-poisonous is less complicated and is familiar to English gas engineers as a result of the descriptions ["JOURNAL" for Feb. 27 and June 19] which have been published of the pioneering work at Hameln where the first installation for the production of town gas of low carbon monoxide content was erected. Dr. Schuster was actively connected with the development of the method there in use and his account of the plant and of its operation is rendered all the more authoritative by reason of his personal association with the subject.

The problem must be regarded from two viewpoints, the national aspect and the economic aspect. The adoption of the process involves an increase in the amount of coal carbonized and in the amount of coke for sale. In some localities this may be an advantage and, in fact, this was the case at Hameln. In others, the reverse is the case and the introduction of non-poisonous town gas would then only be justifiable on altruistic grounds unless, indeed, it were rendered compulsory by legislation. There are, however, as yet no signs of any governmental action with this end in view. It must be admitted that, apart from any repercussion which the process may have on the coke market, the costs involved are comparatively small. The process is, moreover, relatively simple and various accessory benefits are claimed such as a reduction in the organic sulphur content of the gas and of the benzole recoverable from the gas and a reduction in the cyanogen content of the gas.

Dr. Schuster's book may be warmly commended to gas engineers and chemists who will find it of absorbing interest from beginning to end even though it may not convert them to the policy which the author has so much at heart.

* Stadtgas-Entgiftung, by Fritz Schuster. [Leipzig, 1935, Verlag von S. Hirzel. Pp. viii. + 167. Price RM. 7·60 unbound, RM. 8·80 bound.]

These features have popularised the

MAIN

SUSSEX GAS COOKERS

In Dapple Enamel Finish

● **Enamelled Oven Hangers**
(Patent No. 411,924).

The Enamelled Oven Hangers or Grid Shelf Supports are of a stamped design, flat in shape, with slots for the Grid Shelves, and are easily removable for cleaning. When in position in the oven they afford protection for the enamelled oven linings.

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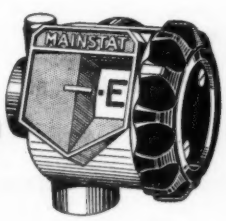
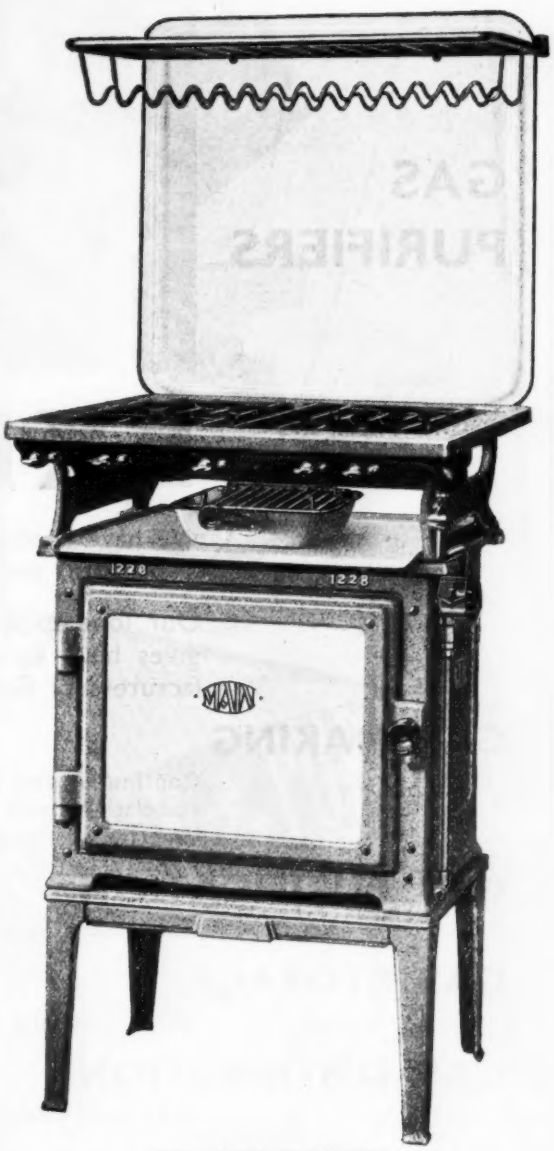
The MAINSTAT, the front view oven control with the distinctive red dial, has done much to minimise the attention required for cooking. Its construction, as with all MAIN products, is strong and durable, while its design is neat and attractive.





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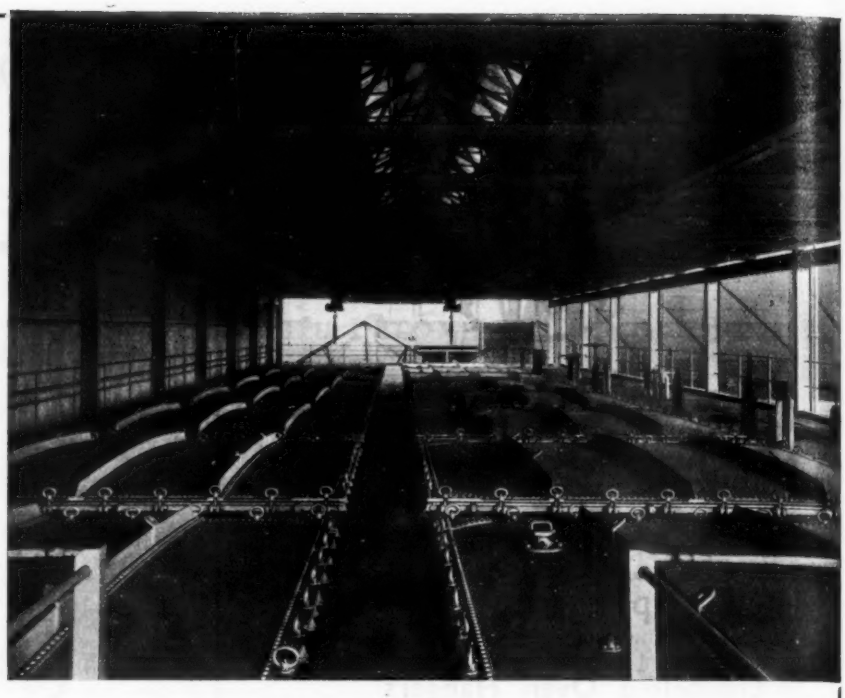

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Forthcoming Engagements

Dec.

13.—London and Southern Junior Association.—Paper by Mr. L. Friedman, of Ascot Gas Water Heaters, Ltd.

14.—Scottish Western Junior Association.—Meeting and Address by Mr. W. D. Rowe, of the B.C.G.A.

14.—Wales and Monmouthshire Junior Association.—Meeting at Cardiff. Paper by Mr. B. J. Bell.

14.—Western Junior Association.—Meeting at Torquay. Paper by Mr. J. W. Denton, of Torquay.

14.—Yorkshire Junior Association.—Meeting at Leeds. Paper by Mr. T. Smith, of Rochdale.

19.—I.G.E.—Refractory Materials Joint Committee, 2.30 p.m.

21.—Scottish Western Junior Association.—Annual Social.

1936.

Jan.

7.—I.G.E.—Research Executive Committee, 2.30 p.m.

11.—Scottish Junior Association.—Joint Meeting in Glasgow. Address by Mr. H. C. Smith.

13.—I.G.E.—Finance Committee, 1.45 p.m.; Membership Committee, 1.45 p.m.; General Purposes Committee, 3.15 p.m.

14.—I.G.E.—Council Meeting, 10 a.m.; Gas Education Committee, 4 p.m.

15.—I.G.E.—Education Executive Committee, 10 a.m.

16.—Midland Junior Association.—Meeting. Paper by Mr. B. Green.

18.—Western Junior Association.—Meeting at Bath. Paper by Mr. F. G. O'Neill.

18.—Yorkshire Junior Association.—Meeting at Oldham. Paper by Mr. R. E. Stott.

24.—London and Southern Junior Association.—Meeting. Paper by Mr. T. A. Wolfe.

25.—Wales and Monmouthshire Junior Association.—Meeting. Paper by Mr. C. F. Petersen.

31.—I.G.E.—Liquor Effluents and Ammonia Committee, 11.15 a.m.; Joint Research Committee, 2.30 p.m.

Feb.

6.—Midland Junior Association.—Meeting. Paper by Mr. G. C. Pearson.

8.—Manchester and District Junior Association.—Meeting at Darwen. Paper by Mr. J. A. Derbyshire.

8.—Scottish Western Junior Association.—Meeting.

14.—London and Southern Junior Association.—Meeting. Paper by Dr. F. J. Dent.

15.—Scottish Western Junior Association.—Annual Social.

15.—Scottish Eastern Junior Association.—Meeting at Perth.

15.—Yorkshire Junior Association.—Short Paper Meeting at Bradford.

20.—Joint Junior Associations.—Visit to B.I.F., Birmingham.

22.—Scottish Western Junior Association.—Meeting at Kingshill Colliery.

22.—Western Junior Association.—Meeting at Yeovil. Paper by Mr. T. W. Clapham.

Mar.

4.—Manchester and Yorkshire Joint Junior Associations.—Visit to Leyland. Paper by Mr. R. L. Greaves.

5.—Midland Junior Association.—Meeting. Lecture on Refrigeration.

7.—Scottish Junior Association.—Joint Meeting in Edinburgh. Paper by Mr. H. Kerr.

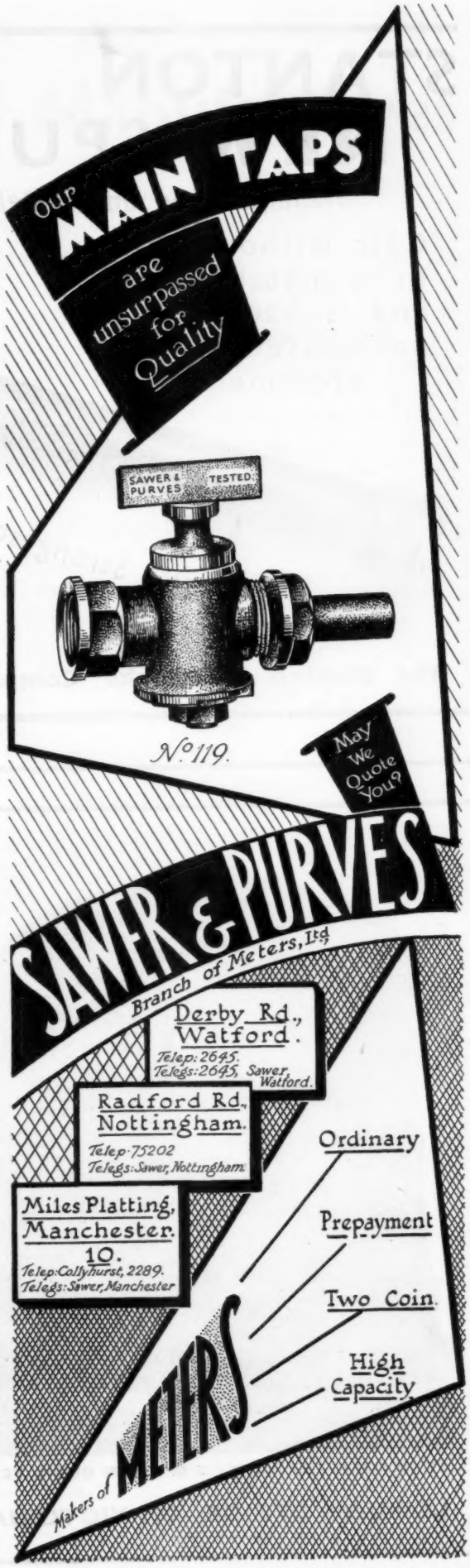
13.—London and Southern Junior Association.—Meeting. General Discussion. Evening.

14.—Scottish Western Junior Association.—Annual Business Meeting. Address by Mr. D. Fulton.

15.—Wales and Monmouthshire Junior Association.—Meeting at Swansea. Paper by Mr. D. E. Wilkins.

21.—Scottish Western Junior Association.—Meeting at Bonnybridge.

21.—Western Junior Association.—Meeting at Cheltenham. Paper by Mr. J. H. Smith.



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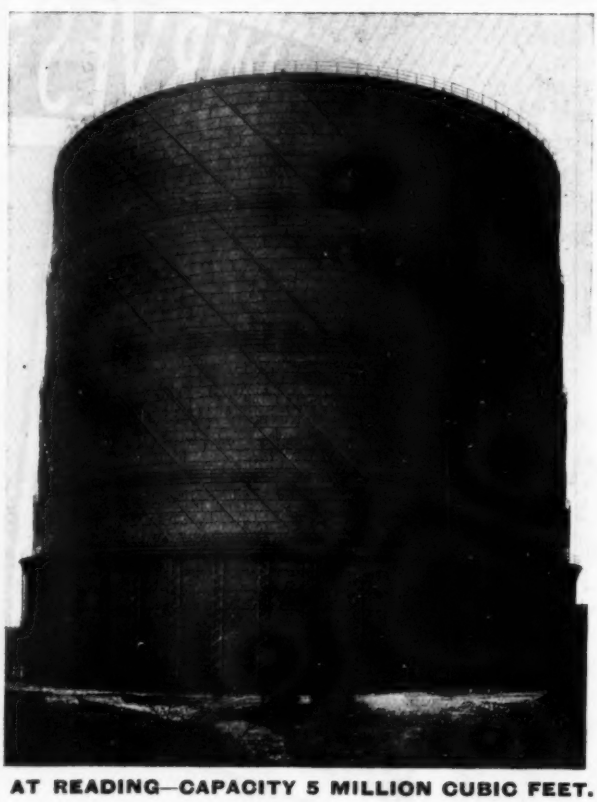
The Stanton Ironworks Company Limited, Near Nottingham



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Gas Markets and Manufactures

Stock Market Report

(For Stock and Share List, see later page)

The success of the Government's funding operations last week gave a stimulus to most markets. Gilt-edged securities in particular were in good demand on rising prices and some closed over two points up on the week. Home rails, which are becoming increasingly popular, made further progress, while in the Industrial market an all-round improvement took place, with bank, insurance, iron, steel, and tobacco shares as strong features.

The volume of business in the Gas Market was also heavier, though there was nothing spectacular in the number of upward price movements. A few fixed-interest stocks made the best showing, and among these Tottenham and Watford 5% preference both gained 3 to 122½, and Commercial 3% debenture registered a similar rise to 87½ *ex* div. Wandsworth 5% preference gained 2 to 122½, and South Metropolitan 3% debenture hardened 1. Among ordinaries the only increase of note was that of North Middlesex with a rise of 2½ points to 172½. On the other hand, several leaders lost ground, notably Newcastle units, which were marked down 9d. to 25s. 3d. on the local Exchange. Gas Light units eased 3d. to 27s. 9d.

The Directors of the South-Western Gas and Water Corporation, Ltd., have declared an interim dividend of 2% on the ordinary shares, payable on Dec. 16. These shares are now *ex* div. and have been changing hands at round about 23s.

Current Sales of Gas Products

The London Market for Tar Products.

Dec. 9.

To-day's prices for tar products are as follows:

Pitch, about 40s. per ton f.o.b.
Creosote, 5¼d. to 5¾d. per gallon.
Refined tar, 4d. per gallon in bulk at makers' works.
Pure toluole, 2s. 9d. to 2s. 10d.; pure benzole, 1s. 7d. to 1s. 8d.; 95/160 solvent naphtha, 1s. 7d. to 1s. 8d.; and 90/160 pyridine, about 4s. 9d.—all per gallon naked at makers' works.

Tar Products in the Provinces.

Dec. 9.

The average prices of gas-works products during the week were: Gas-works tar, 23s. 6d. to 28s. 6d. Pitch—East Coast, 41s. to 43s. 6d. f.o.b. West Coast—Manchester, Liverpool, Clyde, 41s. to 43s. 6d.* Toluole, naked, North, 2s. to 2s. 2d. Coal-tar crude naphtha, in bulk, North, 7¼d. to 7¾d. Solvent naphtha, naked, North, 1s. 5½d. to 1s. 6d. Heavy naphtha, North, 11½d. to 1s. Creosote, *ex* works, in bulk, North, liquid and salty, 4¾d. to 5d.; low gravity, 4½d. to 4¾d.; Scotland, 4¾d. to 5d. Heavy oils, in bulk, North, 4¾d. to 5d. Carbolic acid, 60's, 2s. 4d. to 2s. 6d. Naphthalene, £13 to £15. Salts, 75s. to 80s. bags included. Anthracene, "A" quality, 2½d. to 3d. per minimum 40%, purely nominal; "B" quality, unsalable.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

Tar Products in Scotland.

GLASGOW, *Dec.* 7.

Demand continues strong and prices are firmer accordingly. In many cases distillers are fully sold for prompt and for several months forward.

Crude gas-works tar.—The actual value is 29s. to 30s. per ton *ex* works in bulk.

Pitch.—Quotations are now at 35s. to 37s. 6d. per ton f.o.b. Glasgow for export, and round 35s. per ton *ex* works in bulk for home trade.

Refined tar is unchanged at 2½d. to 2¾d. per gallon, f.o.b. naked.

Creosote oil.—Inquiries are more than sufficient to meet demand and values are therefore firm. B.E.S.A. Specification, 5½d. to 5¼d. per gallon; low gravity, 5⅜d. to 5⅝d. per gallon; and neutral oil, 5⅝d. to 5⅞d. per gallon; all f.o.r. in bulk.

Cresylic acid.—With practically nothing available, prices are nominal. Pale, 97/99%, 1s. 4½d. to 1s. 5d. per gallon; dark, 97/99%, 1s. 2½d. to 1s. 3d. per gallon; and pale, 99/100%, 1s. 4½d. to 1s. 5½d. per gallon; all *ex* works naked.

Crude naphtha.—Available supplies are limited and command 5d. to 5½d. per gallon, according to quality and district.

Solvent naphtha.—90/160 grade is 1s. 4d. to 1s. 4½d. per gallon, and 90/190 heavy naphtha is 11½d. to 1s. per gallon.

Motor benzole is scarce at 1s. 3½d. to 1s. 4d. per gallon in bulk at makers' works.

Pyridines.—90/160 grade is 5s. 6d. to 6s. per gallon, and 90/140 grade is 6s. to 6s. 6d. per gallon.

Benzole Prices.

These are considered to be the market prices for benzole at the present time:

	s. d.		s. d.	
Crude benzole . . .	0 9½	to	0 10	per gallon at works
Motor ,, . . .	1 3	,,	1 3½	,, ,, ,,
90% ,, . . .	1 4	,,	1 4½	,, ,, ,,
Pure ,, . . .	1 7½	,,	1 8	,, ,, ,,

Contracts Advertised To-Day

Boiler (Lancashire).
Plymouth Gas Department. [p. 798.]

Coke Cutting and Screening Plants, &c.
Rhyl Gas Department. [p. 798.]
Warrington Gas Department. [p. 798.]

Dri Gas Plant.
Rhyl Gas Department. [p. 798.]

Gasholder.
Todmorden Corporation. [p. 798.]

Gas Oil.
Sowerby Bridge Gas Department. [p. 798.]

Trade Notes

Mr. Therm Goes by "Garner."

Among the large number of internal-combustion vehicles operated by the Gas Light and Coke Company is a fleet of "Sentinel-Garner" vans of the 0·44 type. In the first instance three vans were purchased, and as these gave such good service, a further twelve were ordered, having a slightly larger capacity. These vans are used for the delivery of gas stoves and other fittings to many parts of London.

Gas Undertakings' Results

Newtownards.

The accounts of the Gas Undertaking at Newtownards show a net loss of £614 on the year's trading, as compared with a net profit of £450. The deficit was principally due to the additional loans repayment and also to purchase of an exceptionally large number of new meters and property improvements.

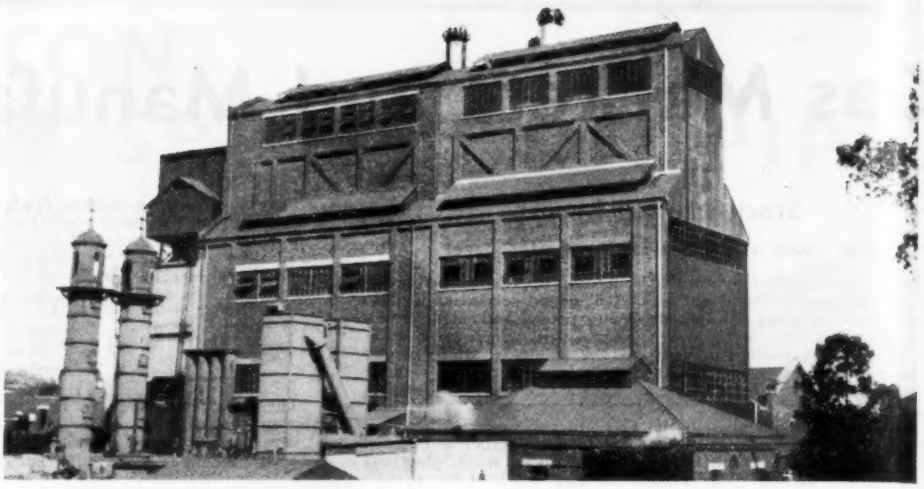
Keady.

At Keady, Co. Armagh, a net profit of £67 is shown on the year, but this is turned into a deficit of over £38 by the deduction of £66 capital liability and £39 reductions in price of the stock of tar. The price of gas was increased to 10s. per 1,000 cu.ft. from 7s. 6d. This increased the revenue with a decreased consumption.

Diaries, Calendars, &c., Received

Seasonable gifts in the shape of useful diaries, calendars, &c., have been received from the undermentioned friends, whose good wishes are heartily reciprocated:

Lunt Brothers, Colmore Row, Birmingham.
John G. Stein & Co., Ltd., Bonnybridge, Scotland.
Staveley Coal & Iron Company, Ltd., near Chesterfield.



A new picture from South Africa showing (left) the first installation and (right) the second installation of Glover-West vertical retorts built to the order of the Johannesburg Municipal Gas Department at the Cottesloe gas works.

Practise **SCIENTIFIC CONTROL** *to the best advantage by adopting the*

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SYSTEMS FOR MODERN GAS & COKE PRODUCTION

Glover-West Vertical Retorts • Westvertical Carbonizing Chambers • West Coal and Coke-handling Systems

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LONDON: Columbia House, Aldwych, W.C.2 — 'Phone: HOLBORN 4108 : 'Grams: "WESGASCO, ESTRAND, LONDON"

STOCK AND SHARE LIST

Official Quotations on the London and Provincial Stock Exchanges

Issue. £	Share	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf.Yr. % p.a.	NAME.	Quotations. Dec. 6.	Rise or Fall on Week.	Transactions, Lowest and Highest of Week.
1,551,868	Stk.	Sept. 9	7	7	Alliance & Dublin Ord. ...	133—143	+3	140—142½
374,000	,,	June 24	4	4	Do. 4 p.c. Deb. ...	97—102	...	...
557,655	,,	Aug. 12	7	7	Barnet Ord. 7 p.c.	165—170	...	168½—170
300,000	£1	Oct. 7	1/9⅜	1/4⅛	Bombay, Ltd.	1⅞—1⅝	...	...
178,480	Stk.	Aug. 12	9½	9½	Bournemouth sliding scale ...	222—232	...	...
550,050	,,	,,	7	7	Do. 7 p.c. max. ...	168—173	...	...
489,160	,,	,,	6	6	Do. 6 p.c. Pref. ...	147—152	...	...
50,000	,,	June 24	3	3	Do. 3 p.c. Deb. ...	83—88	...	...
262,025	,,	,,	4	4	Do. 4 p.c. Deb. ...	105—110	...	...
335,000	,,	,,	5	5	Do. 5 p.c. Deb. ...	123—128	...	...
357,900	,,	Aug. 12	7½	7½	Brighton, &c., 6 p.c. Con. ...	170—175	...	174
649,955	,,	,,	6⅜	6⅜	Do. 5 p.c. Con. ...	156—161	...	160
205,500	,,	,,	6	6	Do. 6 p.c. B. Pref.	142—147	...	...
1,487,500	,,	July 8	5	5	Bristol, 5 p.c. max.	118—120a	...	...
120,420	,,	June 7	4	4	Do. 1st 4 p.c. Deb. ...	102—104a	...	...
217,870	,,	,,	4	4	Do. 2nd 4 p.c. Deb. ...	101—103a	...	...
328,790	,,	,,	5	5	Do. 5 p.c. Deb.	127—130a	...	...
855,000	,,	Sept. 23	8	7	British Ord.	152—157	...	153½—155
100,000	,,	June 7	7	7	Do. 7 p.c. Pref.	155—160	...	...
350,000	,,	,,	5½	5½	Do. 5½ p.c. "B" Cum. Pref.	112—117	...	...
120,000	,,	,,	4	4	Do. 4 p.c. Red. Deb. ...	99—103	...	...
450,000	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	109—114	...	...
200,000	,,	,,	...	17/6⅝	Do. 3½ p.c. Red. Deb. ...	99—101	...	...
100,000	£10	22 May '33	6	4	Cape Town, Ltd.	1—3	...	...
100,000	£10	6 Nov.'33	4½	4½	Do. 4½ p.c. Pref. ...	1—3	...	...
150,000	Stk.	June 24	4½	4½	Do. 4½ p.c. Deb. ...	83—88	...	...
626,860	,,	July 22	6	6	Cardiff Con. Ord.	127—132	...	...
157,150	,,	Aug. 12	6½	5	Chester 5 p.c. Ord.	109—114b	...	...
98,936	£1	Sept. 23	2/-	2/-	Colombo, Ltd., Ord.	1⅜—1⅝	...	...
24,500	£1	,,	1/4½	1/4½	Do. 7 p.c. Pref. ...	20/—22/	...	...
609,204	£1	Oct. 7	-/11·48	-/11·48	Colonial Gas Assn. Ltd. Ord.	19/6—21/6	...	21/-
296,053	£1	,,	1/3·30	1/3·30	Do. 8 p.c. Pref.	24/6—26/6	...	...
1,775,005	Stk	Aug. 12	6	5	Commercial Ord.	100—105	...	103½—104½
620,000	,,	Dec. 2	3	3	Do. 3 p.c. Deb. ...	85—90*	+3	...
286,344	,,	Aug. 12	5	5	Do. 5 p.c. Deb. ...	121—126	...	...
807,560	,,	Aug. 12	7	7	Croydon sliding scale... ...	151—156	...	...
569,590	,,	,,	5	5	Do. max. div.	113—118	...	116½—117
620,385	,,	June 24	5	5	Do. 5 p.c. Deb.	123—128	...	126½—127½
542,270	,,	Aug. 12	10	7	Darby Con.	175—185c	...	...
55,000	,,	June 24	4	4	Do. 4 p.c. Deb.	100—105c	...	...
239,000	,,	Aug. 12	5	5	East Hull Ord. 5 p.c.	109—112	...	...
181,625	,,	Aug. 12	6	6	East Surrey Ord 5 p.c. ...	129—134	...	132½
175,609	,,	June 7	5	5	Do. 5 p.c. Deb. ...	120—125	...	...
19,313,481	,,	Aug. 12	5⅜	5⅜	Gas Light & Coke 4 p.c. Ord.	27/3—28/3f	—/3	27/4½—27/10½
2,600,000	,,	,,	3½	3½	Do. 3½ p.c. max.	88—91	...	89—91
4,477,106	,,	,,	4	4	Do. 4 p.c. Con. Pref. ...	105—108	...	106—108½
8,602,497	,,	Dec. 2	3	3	Do. 3 p.c. Con. Deb. ...	89—91*	—½	89—91
3,642,770	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	113—116*	—2	116
3,500,000	,,	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	111—114*	—1	112—113½
270,466	,,	Aug. 12	6	6	Harrogate New Cons. ...	132—137	...	...
140,000	£1	Sept. 23	1/7½	1/7½	Hongkong & China, Ltd. ...	1¾—1½	...	...
213,200	Stk.	Aug. 12	6	6	Hornsey Con. 3½ p.c....	130—135	...	...
5,600,000	,,	Nov. 4	14	8	Imperial Continental Cap. ...	175—185	...	177—181½
223,130	,,	July 22	3½	3½	Do. 3½ p.c. Red. Debs.	92—97	...	...
285,242	,,	Aug. 12	8½	8½	Lea Bridge 5 p.c. Ord. ...	175—180	...	...
2,167,410	,,	Aug. 12	6	6	Liverpool 5 p.c. Ord.... ...	133—135b	...	...
245,500	,,	June 7	5	5	Do. 5 p.c. Red. Pref. ...	105—110b	...	...
306,083	,,	July 8	4	4	Do. 4 p.c. Deb.	105—107b	...	...
165,736	,,	Aug. 26	10	8	Maidstone 5 p.c. Cap. ...	182—192	...	...
63,480	,,	June 24	3	3	Do. 3 p.c. Deb. ...	80—85	...	...
75,000	,,	Dec. 2	†10	†10	Malta & Mediterranean ...	205—215*	—5	...
					Metropolitan (of Melbourne)			
392,000	—	Oct. 1	5½	5½	5½ p.c. Red. Deb.	98—103	...	...
231,978	Stk.	Aug. 12	5	5	M. S. Utility "C" Cons. ...	108—113	...	...
818,657	,,	,,	4	4	Do. 4 p.c. Cons. Pref.	100—105	...	103½—104¾
360,075	,,	June 24	4	4	Do. 4 p.c. Deb. ...	102—107	...	...
148,955	,,	,,	5	†5	Do. 5 p.c. Deb. ...	120—125	...	...
125,000	—	July 1	3½	3½	Do. 3½ p.c. Rd. Rg. Bds.	97—100	...	...
675,000	,,	Nov. 18	†3	†3	Montevideo, Ltd.	48—53	...	49
2,061,315	,,	Aug. 12	5⅜	5	Newcastle & Gateshead Con.	25/—25/6df	—·9	...
682,856	,,	,,	4	4	Do. 4 p.c. Pref. ...	107—108d	...	...
776,706	,,	June 7	3½	3½	Do. 3½ p.c. Deb. ...	100—102d	...	...
277,285	,,	Oct. 21	5	5	Do. 5 p.c. Deb. '43 ...	105—106d	...	...
274,000	,,	Aug. 12	5	5	Newport (Mon.) 5 p.c. max....	113—118a	...	...
225,000	,,	Aug. 12	7½	7½	North Middlesex 6 p.c. Con.	170—175	+2½	174—175
396,160	,,	Aug. 12	5	5	Northampton 5 p.c. max. ...	105—110	...	...
300,000	,,	Nov. 4	†7	†9	Oriental, Ltd.	163—168	...	...
416,617	,,	June 7	8	8	Plym'th & Stonehouse 5 p.c.	162—167	...	...
504,416	,,	Aug 12	8½	8½	Portam'th Con. Stk. 4 p.c. Std.	173—178	+1	...
241,446	,,	,,	5	5	Do. 5 p.c. max. ...	110—115	...	...
114,000	,,	July 22	5	5	Preston 5 p.c. Pref.	106—111	...	...
321,961	£1	Sept. 23	...	1-	Severn Val. Gas Cor. Ld. Ord.	22/—23/-	—/3	22/-
319,510	£1	,,	...	-/10½	,, ,, 4½ p.c. Cum. Pref.	21/9—22/9	...	22/0½
1,736,968	Stk.	Aug. 26	6	6	Sheffield Cons.	140—142e	...	...
95,000	,,	June 24	4	4	Do. 4 p.c. Deb.	102—104e	...	...
133,201	,,	Aug. 12	5	8½	Shrewsbury 5 p.c. Ord. ...	135—140	...	...
90,000	£10	May 27	†3	†3½	South Africa	3—4	...	...
1,061,779	£1	Sept. 23	1/2½	1/2½	South East'n Gas Cn. Ld. Ord.	27/6—28/6	...	28/—28/3
845,016	£1	,,	-/10½	-/10½	Do. 4½ p.c. Red. Cum. Pref.	22/3—23/3	...	22/3—22/9
450,000	Stk.	Aug. 12	4	4	Do. 4 p.c. Red. Deb. ...	100—103	...	...
6,709,895	,,	Aug 12	6½	5	South Met. Ord.	131—136	—1	131½—134½
1,135,812	,,	,,	6	6	Do. 6 p.c. Irred. Pf. ...	147—152	...	...
850,000	,,	,,	4	4	Do. 4 p.c. Irred. Pf. ...	105—109	...	107½—107⅞
1,895,445	,,	June 24	3	3	Do. 3 p.c. Deb. ...	88—91	+1	89½—91⅛
1,000,000	,,	July 8	5	5	Do. 5 p.c. Red. Deb....	115—118	...	...
209,820	,,	Aug. 12	8½	8½	South Shields Con.	171—173d	...	...
1,543,795	,,	Aug. 12	6	6	South Suburban Ord 5 p.c. ...	129—134	+1	130—131
512,825	,,	,,	5	5	Do. 5 p.c. Pref. ...	121—126	...	123½
500,000	,,	,,	4	4	Do. 4 p.c. Pref. ...	103—108	...	...
888,587	,,	June 7	5	5	Do. 5 p.c. Deb. ...	122—127	...	125½—126
250,000	,,	,,	4	4	Do. 4 p.c. Deb. ...	103—108	...	...
647,740	,,	Aug. 12	5	5	Southampt'n Ord. 5 p.c. max.	115—120	...	...
121,275	,,	June 7	4	4	Do. 4 p.c. Deb.	100—105	...	...
350,000	,,	Aug. 12	5½	5½	Swansea 5½ p.c. Red. Pref. ...	112—117	...	...
200,000	,,	June 7	6½	6½	Do. 6½ p.c. Red. Deb. ...	98—103	...	...
94,000	,,	...	...	...	Do. 3½ p.c. Red. Deb. ...	97—102	...	...
1,076,490	,,	Aug. 12	6⅔	6⅔	Tottenham and District Ord.	149—154	...	149
409,835	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	130—135	...	...
62,235	,,	,,	5	5	Do. 5 p.c. Pref. ...	120—125	+3	121
334,615	,,	Dec. 2	4	4	Do. 4 p.c. Deb. ...	100—105*	—1	...
369,774	,,	Aug. 12	7	7	Uxbridge, &c., 5 p.c.	151—156	...	156½
108,330	,,	,,	5	5	Do. 5 p.c. Pref. ...	117—122	...	121
1,340,521	,,	Aug. 12	7	7	Wandsworth Consolidated ...	157—162	...	161—162
1,371,373	,,	,,	5	5	Do. 5 p.c. Pref. ...	120—125	+2	123—125
1,317,964	,,	June 7	5	5	Do. 5 p.c. Deb. ...	123—128	...	...
338,300	,,	,,	4	4	Do. 4 p.c. Deb. ...	104—109	...	...
499,735	,,	July 8	6½	6½	Watford and St. Albans Ord.	149—154	...	153
200,000	,,	,,	5	5	Do. 5 p.c. Pref. g...	120—125	+3	...
200,000	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	135—140	...	...
200,000	,,	Dec. 2	4	4	Do. 4 p.c. Red. Deb.	98—103†	—1	...
100,000	,,	,,	...	3½	Do. 3½ p.c. Red. Deb.	96—101*	—1	...
158,400	,,	Aug. 12	6g	5	Winchester W.&G. 5 p.c. Con.	114—119	...	...

Quotations at :—*a.*—Bristol. *b.*—Liverpool. *c.*—Nottingham. *d.*—Newcastle. *e.*—Sheffield. *f.*—The quotation is per £1 of Stock. *g.*—Paid £3, including 10s. on account of back dividends. * Ex. div. † Paid free of income-tax. ‡ For year. § Actual for three months.

COMPANY NOTICES.

HORNSEY GAS COMPANY.

NOTICE is Hereby Given that the TRANSFER BOOKS of this Company, relating to DEBENTURE STOCK only, WILL BE CLOSED from the 18th to the 31st December, 1935, both days inclusive.

By order of the Board,
K. LESLIE MORTIMORE,
General Manager and Secretary.

Gas-Works,
Hornsey, N.8,
Dec. 10, 1935.

THE BARNET DISTRICT GAS AND WATER COMPANY.

NOTICE is Hereby Given that the TRANSFER BOOKS of this Company relating to DEBENTURE STOCK WILL BE CLOSED on the 23rd December, 1935, and RE-OPENED on the 1st January, 1936.

By order of the Board,
E. D. DAVEY,
Secretary.

Offices:
139, Cannon Street,
London, E.C. 4.
Dec. 7, 1935.

UXBRIDGE, MAIDENHEAD, WYCOMBE, AND DISTRICT GAS COMPANY.

NOTICE is Hereby Given that the DEBENTURE TRANSFER BOOKS WILL BE CLOSED from the 17th to the 31st December, both days inclusive, and the Interest Warrants will be paid on the 1st January next to the Debenture Holders registered at the date of closing.

By order of the Board,
GEORGE J. BRISTOW,
Secretary.

Dec. 9, 1935.

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